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Original Department.

Viburnum Prunifolium—its Medicinal Properties and Uses.

By J. M. Blackerby, M. D., Milford, Ky.

I have been for some time an interested reader of much that has been written in the GAZETTE and other journals by various practitioners and correspondents from all sections of the country, in regard to the therapy of this, to me, very valuable drug; but have been no less interested than amused, or I might say surprised, at the criticism of Dr. Houston's article on viburnum by Dr. Smythe, in the Southern Medical Record. I can but think Dr. Smythe a candid and honest investigator, though from some cause wholly inexplicable, certainly greatly mistaken in his views in regard to the properties and action of the drug in question. May it not be that the doctor has misjudged his cases, or that he has been unfortunate in the selection of the drug? for I am unwilling to think him prejudiced against a remedy so favorably received by so large a number of the profession; in whose hands it seems to have proven all they claim for it; nor am I willing to believe the doctor misstates the case as he understands it; but I much incline to the opinion, with all the testimony in favor of the drug, that he has been largely in fault in the selection of his cases. As Dr. Houston properly says, there are cases in which we could not expect the drug to prove efficient. For instance, if the fœtus is non-viable, or, if still viable and the membranes have ruptured before our arrival, viburnum certainly will not prevent the expulsion of the fœtus; neither will any other drug, to me known. But this being the case, is it at all certain there is no benefit to be expected from the use of viburnum?

In these cases we are very frequently confronted with disagreeable and often dangerous hemorrhages, many, if not all of which may be largely controlled by the timely and judicious administration of viburnum, as I feel certain I have proven in numerous cases. But, I may be asked, how I know that viburnum was efficient in preventing the hemor-

rhage, or in procuring a cessation of it? Could I determine certainly that the case would have resulted in excessive hemorrhage? To this I may answer that the careful and thoughtful physician always looks forward to the possible, if not probable, result of hemorrhage in such a case, and endeavors to anticipate such result by the timely exhibition of medicine that he hopes will meet and prevent such an occurrence. It is true, if a result is anticipated but does not occur, we can not determine that it would not have occurred had the agent not been used. But such argument does not impair the value of a drug. If in the use of viburnum in a large number of such cases, they are all brought safely through to recovery, we have, and justly so, an established confidence in the drug, until some case presents itself in which the drug fails to accomplish that for which its administration was designed; and indeed, with a valued drug, repeated failures under favorable circumstances would be necessary to convince us of its unreliability in such cases. While I do not wish to be understood as claiming for the drug specific properties in such cases as I hold it applicable in the treatment of, and I know of no writer that does so hold, yet with others, I claim for it a definite place in the materia medica as an efficient and reliable uterine nervine and tonic, and a more certain anti-abortive than any other one agent we now possess. This may appear as a bold and unguarded assertion to many; but from the experience I have had with the drug for ten years, I am fully warranted in my statement.

Can Dr. Smythe, or any gentleman, speak with the same certainty of any other one agent? These are cases of grave interest both to physician and friends, and how much more so to the patient! And if in all the past we have found no reliable agent to meet the demand in such cases, when great suffering and probable death are staring us in the face, how cordially should be welcome one that offers greater success than any heretofore tried. That, in some cases of peculiar idiosyncrasy or special complication the addition of another drug to meet such requirements is fairly and justly admissible, is true; but that fact does not militate against the value of viburnum in the least. There are many drugs that possess a decided prophylactic property, yet in certain cases their specific use is greatly enhanced by the addition of some other agent. That fact does not weaken the power or lessen the value of the primary drug, nor destroy the argument in its favor.

For the purpose of illustrating my experience in the use of viburnum, if I am not thought too prolix or am not asking too large a space in the GAZETTE, I will detail several cases from my notebook, recorded since 1873. By these cases I hope to be able to show the influence of viburnum on the gravid and non-gravid uterus and its adaptability to the treatment of some of the uterine troubles that have hitherto been difficult to manage. My attention was first called to the drug as an excellent anti-abortive remedy by a warm personal friend, a physician of considerable reputation, in the year 1873. His praise of the drug, and his details of a single case in which he had used the medicine, as well as his urbanity and probity, determined me to test the article in the first favorable case that presented itself. Knowing, at that time, nothing of the fluid extract, I prepared a tincture by macerating ten ounces of freshly shade-dried bark—taken from the root of the tree in May—in one pint dilute alcohol for fifteen days, then expressed and filtered. Of this tincture, I have used from 30 drops to a large tablespoonful.

In 1873, I removed to southern central Kentucky, and as I was an entire stranger and located in a community supplied with numerous, and many good physicians, I was fully aware of the difficulty of establishing myself in practice; hence, to succeed it behooved me to be careful that I made as few mistakes as possible and to select my cases with scrupulous care, and judiciously select and apply my remedies, if called on to treat such diseases as prevailed in the community. Shortly after my location there I was called on by a gentleman, and asked to attend his wife in her expected confinement, which he said would occur in about three weeks; their former family physician had died some three months previous. Accordingly at the expected time I was summoned at 9 o'clock in the morning to see the lady, Mrs. O., æt. 28, very small of stature, weighing in her usual health, but about 94 pounds, though rather compactly formed, health generally good, carrying at this time her sixth fœtus. On my arrival, and upon examination, I found the membranes ruptured, liquor amnii largely discharged, and os dilated to the size of a fifty cent piece, pains transient and irregular. As there had nothing unusual occurred with this patient up to the time of her going to bed, and nothing unnatural appearing in the case at the time, I advised her to keep quiet in the bed, while I visited a patient on a neighboring farm, promising to return in an hour. When I left the room, the husband asked to have a talk with me in regard to his wife's condition on former occasions of confinement. I then learned for the first time, that Mrs. O—— had aborted five times previously, the first occurring from excessive fright at 19 years of age, produced by the burning of their house, when in the seventh month of pregnancy. All the succeeding abortions occurred in either the seventh or eighth month of pregnancy, except one, that occurring in the third month; in each case the fœtus was dead. The information derived from this conference with the husband surprised and astonished me, and I declined to leave until I had made further examination and inquiry of my patient; and satisfied myself by so doing that the fœtus in utero was also dead, and so informed both the lady and her friends. The indications justifying it, I administered ʒj of tinct. of ergot, repeating the dose in 30 minutes, and gave 20 drop doses until 5 or 6 portions more were given, at which time labor became efficient and the child expelled, though dead, as I had anticipated. Mrs. O——, however, made a good recovery. In a few months she was again pregnant, and Mr. O—— consulted me as to the possibility of his wife's ever being able to mature and carry a child to full term. I stated plainly to him the nature of her trouble and difficulty and advised a course to be pursued, to which he willingly and anxiously ac-

ceded, as did his wife also. Accordingly, I advised and prescribed simply the Tincture of Viburnum, to be taken in one drachm doses morning, noon and night, to live lightly, taking her usual exercise and to dress loosely; and should she discover at any time any uneasiness or distress in the uterine region to inform me of it immediately. The advice was followed implicitly, and during the 7th and the greater part of the 8th month of her pregnancy she continued to take the remedy, but during the 9th month she reduced the dose to 3 ss three times daily. In due time I was summoned to attend her in her 7th labor at 11 o'clock p.m. On my arrival I found labor just setting in, pains natural and easy but seldom recurring, the os, soft and very slightly patulous; the vagina moist and of normal temperature. Gave an ounce of castor oil as the bowels had not been moved since the preceding day, and as I was boarding in the house—a hotel—retired to my room with instructions to be summoned when the oil acted. At 5 a.m. the summons came, and on examination I found labor active, and at 7 a.m. she gave birth to a fine healthy male child. Mother and babe both did well, and I am of opinion that I never conducted a more satisfactory labor than this one. Before her 8th confinement I moved to my present location, and consequently she fell into the hands of other physicians; but during her 8th pregnancy, at her request, her husband wrote me, asking that I prescribe again for her. I did so, and directed that she commence in the beginning of the 7th month to take fluid extract Viburnum Prunifol. 3 j morning, noon and night in a wineglassful of water, and continue the remedy up into the first week of the ninth month; then 25 or 30 drops three times a day during that month, being careful as to her diet and habits of life as in her former pregnancy. After her confinement I received a letter from Mr. O., informing me of the safe delivery of his wife of a fine healthy daughter. These results were followed by her ninth pregnancy; but during the period of gestation I was not consulted, and shortly after her confinement learned that she had miscarried in the seventh or beginning of the eighth month, and learned also from her husband that they were induced by another physician to leave off the use of the medicine, as it was likely she would go to full term without medical interference, and that it was probable the medicine she had heretofore used had no agency in conducting her safely through her confinements. Since the ninth labor I have heard nothing further of her.

What Dr. Smythe might think of the results in this case, I can not say, but suppose he would come to the conclusion arrived at by the physician who advised and attended Mrs. O. in her ninth pregnancy and labor. While the several results of this case were not sufficient of themselves to convince me of the positive sufficiency of the drug in all cases of a similar character, that I might be called on to prescribe for, I must confess that the results were of such a nature as to give me strong faith in its prophylactic properties, as well as its nervine influence in quieting and counteracting the irritability of the gravid uterus. So well was I satisfied with the results in the above case, that on being called to the following case:

M. S——, a woman of the town, aged 32, large and finely developed, in the seventh month of her pregnancy, having received a fall backward from a high fence, in three or four hours complained of pain in the sacral region, with slight bearing down pains. In a short time thereafter slight hemorrhage appeared, and I was sent for. I found the patient as described; ascertained that no water had passed from the uterus, and that the os was in tact. I directed that the room be kept cool and the patient be kept quiet in the bed, and to remain on her back as much as possible, and ordered two teaspoonfuls of the fluid extract of viburnum in a wine glass of water to be given every hour till the pains ceased; then a teaspoonful every two hours until I saw the patient in the morning, or should be sent for. At my visit in the morning, 9 o'clock, I found patient resting quietly and free from pain; hemorrhage had ceased. I continued the viburnum in teaspoonful doses every three hours during the day and night following. The case progressing so favorably that at my next visit, I directed patient to continue the medicine in teaspoonful doses, three times daily, the last one on retiring at night, until her confinement, or, at any rate, to take a dose if at any time she should feel any uneasiness in the back or abdomen. This case progressed favorably to full term, and I delivered her of a healthy babe without any untoward event. Perhaps I should say here that this woman had been treated for syphilis five years previous to my being called to treat her in the present case, though no taint of the disease remained visible.

My third case was in a young married lady, primipara, in the third month of gestation. Was sent for to see Mrs. B. L., the messenger stating she had arrived home from a thirty mile horseback ride late in the evening, and on retiring for the night complained of pain in the lower part of back. This, however, she and her husband thought arose from the fatigue of riding so long at a time; but later in the night, the pain increasing and extending to the abdomen, they became alarmed and sent a messenger for me in great haste. On my arrival, at 3 A. M., I found the patient suffering as described, though quite calm, considering the amount of pain she suffered. After hearing their explanation of her symptoms during the evening and night, I told them I feared a miscarriage, and asked the privilege of making a digital examination, which was cheerfully granted. On withdrawing the finger from the vagina, I was somewhat surprised to find it stained with blood. This convinced me that a miscarriage was imminent, and that no time should be unnecessarily delayed to prevent its culmination. I immediately gave the patient two teaspoonfuls of viburnum fluid extract, in a little water, and repeated the dose in thirty minutes. In an hour from the second dose the patient was comparatively easy, and I gave her a teaspoonful more and retired to take some rest, directing the medicine to be repeated every hour in teaspoonful doses if the patient did not sleep, but in no case to wake her if her sleep was tranquil. She rested quietly and slept till 8 in the morning, when she awoke, and on turning over realized slight pain in the back, and immediately

took a teaspoonful of the medicine. I saw her at 9 A. M., resting easy and free from pain; complained of fatigue from her day's ride, but in all other respects seemed cheerful and composed. She partook of a light but nourishing breakfast, after which and a short rest, I made another examination per vaginam, and ascertained that there was no dilatation present, and the finger but the least stained. I directed a teaspoonful of viburnum to be taken every three hours for two days, then a teaspoonful morning, noon and night for a week, and enjoined the recumbent position and perfect quietude for the same length of time; and all visitors prohibited except her mother, and should any alarming symptoms arise I was to be immediately summoned to her bedside. My instructions were fully carried out and a perfect recovery followed, and in due time I had the pleasure of delivering her of a healthy male child. I could add many other cases from my note-book, but as they are all similar in character, they would be uninteresting reading.

It may be asked if I had no failures with viburnum. I answer yes, but they proved to be cases in which no agent could have succeeded; cases in which there was laceration of the os and cervix, and rupture of the membranes, etc. Why then did I give viburnum, knowing that in these cases it would not prevent miscarriage; why not give morphia or chloral or some of the usual remedies? I answer, my success has been satisfactory, both to myself and patients, with viburnum; and many women are so unfavorably impressed with remedies, especially with the opium salts, that I do not use them if I have a drug that answers my demands. In viburnum we have such an one in my judgment. It seems peculiarly adapted to allaying nervous irritability of the uterus and its appendages, whether in the gravid or non-gravid state.

I now come to speak of another class of cases; and a class in which we may expect as great a degree of benefit as in the one I have just discussed. I mean dysmenorrhœa or painful menstruation, and I know of scarcely any affliction more stubbornly difficult to treat that this; and none in which the physician earns fewer laurels. Who has practiced medicine any length of time and not been urgently requested to furnish relief to some suffering girl or woman, and who has not failed much more frequently than he has given relief? True, we can generally blunt the sensibilities, and thus lessen the suffering, with opium salts or chloral hydrate, but do these drugs ever make a cure? If they have ever done so, I have failed to learn it. Now and then we read a formula or see a prescription that is said to have effected a cure or to have been useful in giving relief in dysmenorrhœa, but with me they have usually proved failures. But this might occur from the want of a proper selection of my cases. So with any other remedy, viburnum not excepted; but I do not, nor do I so understand any of the advocates of the drug, believe that viburnum will cure all cases of dysmenorrhœa taken indiscriminately. I hold and so I read the opinions of other writers, that conditions are essential in the application of this as in the application of all other true remedies. A remedy will cure a disease, certain conditions and symptoms presenting, but may and often will prove inadequate under other conditions, presenting entirely different symptoms. If I were asked to prescribe for a case of dysmenorrhœa in which endometritis was the prominent feature, I should not think of viburnum as the remedy; or if some of the displacements of the organ prevail, or a highly congested condition, the physician would endeavor to select the remedies to remove these troubles; then if painful menstruation continue, viburnum will be found of service and I think adequate to the task. In all conditions of female life, which tend to develop an active nervous system and when patients are required to endure at times more fatigue or greater excitement than usual, or in such cases as when pain occurs at the commencement of the catamenial period before the flow is established, or when it is accompanied with fullness and weight attended with a bearing down sensation, or where the pain is intermittent in its nature, I think at once of the viburnum and prescribe it with as much certainty as I do quinine for ague. These are cases of simple dysmenorrhœa super-added to conditions already existing of a chronic nature, as slight flexions, or slight cervical endometritis, slight stenosis, or where the pains are of a neuralgic character, in which I usually find viburnum to be an excellent palliative, and if not adequate to effect a permanent cure, it will in the course of time produce such relief as to greatly lessen the sufferings of the patient and produce a fair degree of health.

The presentation of two or three cases of this disease and the treatment may not be out of place, and will suffice to indicate the effects of the remedy. At an early period in my professional life I was asked to treat Miss C. C. H., for severe pain at the commencement of each menstrual period and from which she had suffered for three or four years. The patient was a blonde, æt. 19, of slight and delicate form, and of a peculiarly sensitive nature. In this case I prescribed such remedies as I had learned from the books and at college, and also from such of my confraternity as I consulted in regard to the case; but I failed to produce more than slight palliation, and that principally with the opiates in general use. After suffering more or less severely for several years, the lady was advised to consult a physician of Boston, and for that purpose visited that city and remained under his treatment six or eight months. On her return she informed me she had derived very little benefit from the treatment given her in the city, and a year or two after, growing worse and again suffering greatly, asked me to try and do something for her. At this time having had some experience in the use of viburnum, I determined to test it in her case, but to add an opiate during the crisis of pain. I therefore put her on teaspoonful doses three times daily, to be continued until the recurrence of pain, then take the following powder:

℞ Morphia acetat, gr. ¼.
Bismuth subnit, gr. v.

Mix and take after the occurrence of pain, and increase the viburnum to two teaspoonfuls at a dose until the cessation of the menses; then continue as before, a teaspoonful three times daily. This course pursued for a month more with partial relief, I then directed that she use water as warm as she could bear it and with a good syringe throw a continued stream against the mouth of the

uterus every night. In a few months she reported much improvement, but that she suffered so much sickness from the morphine that she wished to discontinue its use; accordingly I advised her to rely on the viburnum and the hot water irrigation, and to continue the remedies indefinitely. It has now been six years since she quit the use of the remedies, and she seldom has more trouble or suffers any greater amount of pain with her monthly sickness than the average of ladies. Did the drug effect any part of the cure in this case, or was it done by the hot water? or was it the conjoined influence of the two agents? I think the true theory is that the water irrigation was the agent in removing the hyperæmia evidently connected with the case, and that removed, the viburnum did its work by quieting the nervous irritability and giving tone and vigor to the uterus and its appendages, acting as an invigorating tonic and sustaining the uterine organs in the healthy performance of their functions.

Case 2.—Mrs. B., æt. 19, slight and delicately formed and of very nervous temperament, recently married; consulted me for severe pain at the recurrence of each menstrual epoch since her marriage. As she said there had been but slight pain with her monthly sickness previous to her marriage I concluded her troubles originated in too great excitement of the uterine and pelvic system of nerves at this particular and critical period of her life. I therefore prescribed only viburnum fluid extract in teaspoonful doses three times daily, the last one on retiring at night; and advised a daily bath in tepid water, using considerable friction with a crash towel in drying off; diet light and nutritious, but non-stimulating; habits quiet and as retiring as possible. In this case I gave half a teaspoonful Jamaica dogwood (piscidia erythrina) fluid extract, if the pain was severe. At the first recurrence of the catamenia from the time of beginning treatment there was slight fitful pain which readily yielded to the impression of the Jamaica dogwood. After continuing the treatment for three months the dysmenorrhœa permanently subsided, and in two months from date of leaving off the use of remedies, conception took place, and the patient has never experienced any further trouble in that direction. In this case I deemed it a duty to admonish the young husband, and advise moderation and discretion in the acts of coition, and to abstain from anything that would have a tendency to too greatly excite the nervous system, assuring him that without his seconding my efforts by so doing I would probably be unable to effect a cure, and that he might by a contrary course entail on his wife a condition that would prove a lifetime source of trouble and pain. As a sensible and intelligent man he heeded my counsel, and now he enjoys the pleasure of seeing his wife in the bloom and vigor of healthy womanhood. I could detail many cases where I think viburnum has been the efficient agent of relief in these conditions, but this paper must suffice for the present on the subject of dysmenorrhœa.

I will say a few words on the subject of the treatment of menorrhagia in a chronic form, and this I have found to be a disease of frequent occurrence among delicate females, who, from causes incident to their condition in life, are overworked and poorly nourished, and who have arrived at the critical period in a woman's life. In cases of this nature I find the viburnum an excellent remedy, one that seldom disappoints, yet needs to be persistently pushed. It seems, in these cases, necessary to use some agent that will overcome the inertia of the uterine plexus of nerves and stimulate to healthy and vigorous action all functions, physiologically, pertaining to these organs; and for this purpose I believe we shall find in viburnum the sine qua non of such treatment. While it gives rest and quiet to functional excitement of the organs, it seems so to control and influence the nervous system as to produce in some way an equilibrium, and thereby promotes healthy functional action. These are the results of observation from my stand-point, and on them I base the use of the drug in the treatment of this class of cases. With the recital of a single case I shall close this paper, believing that one, taken from among a large number of similar import, to be sufficient to explain the action of the remedy in such cases. Was called to see Mrs. C., æt. 46, the mother of seven children, the youngest 10 years of age. Health has been very poor for two or three years; catamenia irregular for that length of time. Being very poor people and having to work hard, is poorly nourished. Found patient much reduced from severe hemorrhage of the womb; used means necessary to control it and left viburnum, fluid extract, with directions to take a teaspoonful every four hours. At the second visit, I found patient in a much more comfortable condition; hemorrhage ceased, and directed her to take a teaspoonful of the medicine every six hours, and when that was gone to send for more. This precaution, however, was neglected; but she was not again troubled for more than a year, but shortly after the expiration of a year the hemorrhage again recurred. Before I saw her, this time, the hemorrhage had nearly ceased by the application of cold to the abdomen. I placed her on the drug again, and after using it for three months, she occasionally menstruates but has no severe symptoms, nor does she suffer pain any more. Her general health has greatly improved and her complexion become clear and rosy, and appetite fairly good and regular.

With these results before me, I class the drug as an anodyne, antispasmodic and tonic, possessing no narcotic properties discoverable to me in my use of the drug. I have not seen it perceptibly increase the frequency of the pulse, save when I was using the tincture, and that I now attribute to the alcohol in the tincture. That it controls pain in uterine troubles I am satisfied, as also have I found it to do in the urethra and bladder of the male. I am desirous of seeing the drug further tested in diseases pertaining to the male generative organs, and shall, as opportunity offers, seek to make such tests. If my experience shall prove of benefit to others I shall be content. With due regard for Dr. Smythe, I am sorry to have disagreed with him, but such is the experience of physicians. I trust his paths in the practice may be smooth and pleasant, as well as profitable to him.

The annual meeting of the British Medical Association has just been held. As usual the gathering was both interesting and profitable to all concerned.

On the Physiological Action of Manaca.

By E. P. Brewer, M. D., Ph. D., Norwich, Conn.

IN the modern school of therapeutics the scientific method of determining the properties of drugs is recognized as pre-eminently superior to all other schemes. Inconsiderate of the age or standing of a drug it has attacked each in its turn and confirmed or refuted, their supposed virtues. Very naturally then, when a new drug is placed before the profession with the recommendation of forcible toxic powers, the physiological method tests its capacity and precedes its extensive employment.

Manaca, a Brazilian plant, has recently been presented to us for study, it having a reputation for power but no careful indications for administration, or hints of its scope of action. With the desire and purpose of solving the latter, I enter upon this series of experimental inquiry.

To elicit the general action of the drug I will detail the phenomena observed in the initial experiments which have been carefully and repeatedly confirmed.

Experiment 1. Kitten, weight nineteen ounces; respiration, 46; pulse, 120. Exhibited 3 ss of the fluid extract of manaca* *per orem.*

Two minutes: The animal which I roused from sound sleep has grown restless and constantly walks from one side of the room to the other, crying persistently.

Five minutes: The jaw twitches and the pupils are somewhat enlarged.

Eight minutes: The gait has become trembling and squatting, the hind legs bowing outward. Respiration, 12 per minute and rough in rythm; saliva abundant and running from the mouth in tenacious strings.

Fifteen minutes: There is now distinct clonic, spasm in both the hinder and fore extremities, which with the apparent weakness, so interferes with locomotion that the animal, after repeated efforts to retain the upright posture, falls upon its side and remains there in the controlling grip of drug action; pulse, 90 per minute, respiration, 12, pupils dilated.

The pulse though slow is perfectly regular and slightly reduced in force. The respiration has last the cog-wheel rythm and in it slowness retains regularity; the inspiration is rather more quick than expiration, which seems to depend upon the normal resiliency of the diaphragm.

Twenty minutes: The pupils are fully dilated, pulse and respiration unchanged. This state continued for about an hour, when the respiration grew irregular and faltering, running sometimes four and again eight, per minute, and finally ceased. The heart pulsated for a short time after the respiration stopped.

At once opening the body, the heart was dilated and flabby, containing in both ventricles a quantity of fluid blood. The lungs were slightly congested, and the stomach and intestines filled with frothy mucus. In the upper intestine (duodenum and jejunum) considerable bile was found. The liver was congested and the bladder full of urine.

Experiment 2. Kitten; weight, one pound; pulse 120; respiration 48 per minute; 10 minims of fl. ext. of manaca exhibited.

Ten minutes: The past two minutes has ushered in a marked restlessness. The gait is quick, steady and continuous, the animal walking from one side of the room to the other, much after the style of a panther in confinement. The mouth is slightly opened, and the jaw occasionally twitches; pupils enlarged and respond sluggishly to light. Pulse 120, respiration 44.

Thirteen minutes: Constant utterance of a short, sharp cry with each expiration. Locomotion difficult and accomplished principally with the fore legs, the hind legs being bowed and heavily dragged after. Twitching of the muscles of the fore and hind legs and the jaw.

Eighteen minutes: Is unable to walk, but raises itself upon the fore legs and sways from side to side. Pulse 90, respiration 24.

Twenty-five minutes: Clonic spasm in all the muscles of the trunk. They are of short duration and closely simulate the contractions that follow the application of a mild electric current, sometimes effecting this muscle, then that, now another, etc. Pulse 90, respiration 22. Pupils fully dilated. Inspiration quick, expiration prolonged and labored; both acts evidently dependent upon the diaphragm. Consciousness seems unimpaired, the animal endeavoring to respond to its call, but is unable to regain the feet. The testimony of this conscious impulse rests upon an appropriate, though slight, muscular movement and a cry of recognition. The wailing that we recorded hitherto had at this time entirely ceased.

One hundred minutes: Pupils normal. Animal weak, but able to stand. Respiration 30, pulse 110.

Three and one-half hours: Animal perfectly recovered. Respiration and pulse normal. It is inclined to remain quiet, but has eaten freely and played with other kittens. Exhibits signs of muscular weakness on long exercise.

Experiment 3. Kitten; weight, twenty ounces; pulse 124; respiration 49 per minute; 5 minims of manaca fl. ext. *per orem.* The usual restlessness was observed, but not so marked as in the previous experiments, owing, no doubt, to the smaller dose of the drug. The muscular spasm of the jaw and faltering respiration follow directly. In thirty minutes the acme of action was attained, the respiration registering 35 per minute, and the pulse 110. The muscular force seemed little if any impaired and the pupils revealed only inconsiderable changes. In three and one-half hours all trace of its operation has passed away.

Experiments 4 to 10. Confirmed the foregoing records, but failed to disclose new symptoms. In concert they affirm a distinct impression upon important systems; the muscular system is convulsed and voluntary power removed; the cardiac and respiratory systems inhibited and the glands generally stimulated

The effect on each system can be induced through numerous avenues; the spinal, sympathetic or vasomotor nerves may be the elected channel of action, again the structure of the organ itself or great

*Throughout this article by the fluid extract of manaca we always refer to the dealcoholized fluid extract.

nerve centers. For ease and clearness of conception the various systems will be studied separately.

MUSCULAR AND NERVOUS SYSTEMS.

The source of the clonic muscular spasm is important to determine, as it will delineate the origin and area of action in the production of one of the most pronounced physiological symptoms. It might arise from direct action on the intra-muscular nerves, or exaggerated reflex action or the stimulation of the motor nerves. This, however, is only susceptible of solution by special experiments, as follows:

Experiment 11. Cat. After severing the crural and sciatic nerves in one leg, I injected ʒ ss fluid extract Manaca into the leg. In five minutes the jaw commenced to twitch, and in twenty minutes the full physiological phenomena were developed, and invaded all parts of the muscular system except in the leg operated upon.

Experiment 12. Kitten. Aided by chloroform I ligated the femoral and sciatic arteries, and thereby annulled the circulation in the extremity. Into this member I injected ʒ ss fluid ext. manaca. No symptoms being manifest in an hour, I carefully loosened the ligature on the femoral artery and attentively watched the animal. In 15 minutes the jaw twitched, and in 35 minutes clonic spasm had proceeded to both extremities, and also involving the heart and respiration.

Subsequently I modified these experiments on the frog, by removing the integument of the extremity after tying the arteries, and then immersed it in the diluted fluid extract. When the circulation remained intact the physiological action invariably appeared in all portions of the body, except the limb with broken nervous connections. On the contrary, when the circulation was obliterated in the limb and the nerve continuity maintained, the results were negative.

Experiments 13 to 20 confirmed the previous experiments.

It is obvious that clonic muscular spasm arises from the action of the drug upon either the brain and spinal cord, or both, for, as repeatedly demonstrated, when the continuity of the spinal nerves is broken, and the periphery of the nerves immersed in the dilute fluid extract, the whole muscular system, except the limb with severed nerves, responds specifically; the drug is conveyed to the general system by the blood system. Again, if the blood vessels are severed and the nerves left intact, there is no local or general drug action. Accordingly we assert that manaca acts not by direct influence on the periphery of a nerve; neither are its properties conducted from the periphery to the nervous centres by its structure, but that the sole means of distribution is the blood system.

If, then, the muscular spasm is due to the distribution of the drug to the nervous centres through the circulation and its action thereon, it becomes of importance to discriminate the centre or centres of its operations. This we endeavor in the following series:

Experiment 21. Frog: cerebrum ablated; twenty minims of the fluid extract, subcutaneously.

Five minutes: Twitching of the jaw.

Ten minutes: Pupils partly dilated; clonic spasms in the extremities.

Twelve minutes: Twitching of all the muscles of the extremities, abdomen and jaw.

Experiment 22. Frog: cerebrum and cerebellum ablated. Thirty minims of the fluid extract subcutaneously.

Seven minutes: Twitching of the jaw.

Ten minutes: Pupils slightly dilated; spasm in the extremities and abdomen.

Experiment 23. Frog: Descending aorta ligated close to the heart; spinal cord severed a little below the level of the ligature; ʒ ss. of manaca fl. ex. subcutaneously in the neck.

Eight minutes: Twitching of the jaw.

Fifteen minutes: Twitching of the fore legs.

Experiment 24. Frog: Descending aorta ligated. The spinal cord exposed by cutting away the vertebral arches, and severed below the level of the aortic ligature. ʒ ss. of manaca fl. ex. subcutaneously in the neck.

Ten minutes: Twitching of the jaw.

Twelve minutes: Twitching of the upper extremities.

Fifteen minutes: Pupils dilated.

Thirty minutes: No evidence of drug action on the lower extremities.

Forty minutes: A quantity of manaca fl. ex. was poured into the trough created by the removal of the vertebral arches and containing the lower segment of the spinal cord. Two minutes later slight clonic spasm occurred in the lower extremities. In eight minutes their vigor was nearly equal to the ordinary poisonous action.

Experiment 25. Frog: After exsecting the heart and severing the head I placed the anterior extremity of the trunk into a solution of manaca.

Three minutes: Typical clonic spasm.

Twenty minutes: Spasm ceased.

These experiments and their complements (numbering five) when associated with experiments 11 to 20, fairly demonstrate the drug action on the muscular and nervous systems. On the muscular system there is primarily excitation manifested by restlessness, which deepens into muscular spasm and absolute loss of co-ordination. If now the animal be irritated by noise or the pain of a deep cut, it will emit a cry, but exert only the smallest muscular endeavor to escape. The spectacle is that of ordinary sensibility combined with motor paralysis. However this is misleading, unquestionably the sensibility is ordinarily acute, but the appearance of true motor paralysis is erroneous, for, if the faradic current is applied, the response is wholly normal in intensity and delicacy; this is not the case in true paralysis. Corroborative testimony is furnished in the non-action of the drug on the terminal nerves (as recorded in experiment 12), either to generate spasm or to take up and conduct the virtues to the great nerve centres or to decrease motor power. When a spinal nerve is faradized in the drugged animal, the muscular spasm is of common vigor, but when a current is passed through the spinal cord vehement spasm follows—spasm far more powerful than in the normal animal. This remains uninfluenced by the ablation of either or both the cerebrum and cerebellum. Hence, the excitability entirely resides in the cord itself, and, we believe, results from the direct action of the drug upon the spinal marrow.

In support of this assertion we adduce the fact of the total absence of the physiological phenomena from that portion of the cord where the drug is prevented from acting upon (experiment 13), and the quick appearance of the toxic symptoms on the application of the drug to the cord, (experiment 14). Reflex action is gradually diminished and ultimately lost after the ingestion of a *lethal* dose. At the advent of the full drug action the foot of a cat or frog may be immersed, without reflex action, in a solution of sulphuric acid so strong that the tissues are actually eaten up by it. There will be every manifestation of pain and a very feeble voluntary motion at removal, yet no reflex action or power to remove it, and, at the same time, the clonic spasm will continue undisturbed in the muscles adjacent to the disintegrating process.

Briefly, the action on the muscular system is primarily, excitation, exemplified by restlessness, and secondarily, the appropriation of the muscular force to the specific action of the drug, as exemplified in clonic spasm and the loss of co-ordination. But all this is purely symptomatic, the real change being effected in the spinal cord, consisting of the annihilation of reflex force and the profound stimulation of the motor centres.

The brain suffers no perceptible change; neither, as far as we can determine, are its motor centre or centres acted upon, at least the muscles controlled by them are never involved in clonic spasm.

CIRCULATORY SYSTEM.

The general drug action hitherto cited marks a distinct decrease in the rapidity of the heart's contractions. With the full sway of action the pulse of 120 per minute was reduced one-quarter in frequency and equivalently in force. But this data being insufficient for accurate conclusions, I selected eleven frogs for special study. Securing them to a board I cut away the sternums so as to expose the beating hearts. After counting the pulsations for five minutes I injected into the stomachs of eight of them, ʒ j of manaca fl. ex. (expts XXXI—XXXIX) retaining three undrugged for a standard of comparison. My results were as follows:

	5 minutes	15 minutes.	25 minutes.	35 minutes.	45 minutes.	60 minutes.	Heart Stopped.
Healthy Frog...	64	62	60	58	58	58	5 hours.
" " ...	64	62	62	62	66	60	5¾ hours.
" " ...	60	58	58	57	57	56	5¼ hours.
Medicated Frog	60	56	30	40	38	24	3½ hours.
" "	60	58	54	44	42	32	2¼ hours.
" "	54	52	48	42	40	30	2½ hours.
" "	60	60	48	36	26	24	2½ hours.
" "	62	58	46	40	26	22	2¾ hours.
" "	60	58	54	50	46	40	3 hours.
" "	72	68	56	46	44	42	3¼ hours.
" "	64	60	56	46	42	38	3 hours.

Comparing the frequency of the normal and medicated frog's heart it is found that at the expiration of five minutes an appreciable change has not yet been inaugurated, the registration being nearly or exactly the same. In fifteen minutes both have decreased in frequency, but the medicated slightly more than the normal heart. In twenty-five minutes the depression was very marked in the medicated animal and continued to fall at the expiration of forty-five and sixty minutes. Now, comparing the normal heart with the drugged heart, we find the former from four to six beats slower than when first exposed, while the latter is depressed from twenty to forty beats per minute. The invasion is slow, the most decided impression ranging from twenty-five to thirty-five minutes after the drug's ingestion. It is also essential to observer that depression is the sole feature of its cardiac effect.

Averaging the duration of the heart's actions, 5⅓ hours will represent the duration of activity in the normal heart under the abnormal surroundings, while three hours will represent the duration of activity in the drugged heart under like circumstances. The difference is represented by 2⅓ hours. Athough this data is a criterion to judge of the fatality of the drug to the heart's action, it is surely misleading as to the true drug influence on the life sustaining capacity of the heart, for in the frog the heart pulsates long after it ceases to wholly expel its contents into the arteries, or, in other words, life in the frog actually ceases long before the heart stops beating. To avoid this possible error I noted the time at which this organ failed to wholly empty itself both in normal and drugged frog.

	Heart fails to wholly expel its contents.
Normal frog	3 hours.
" "	3 1-4 "
" "	3 "
Medicated frog	1 3-4 "
" "	1 5-60 "
" "	1 1-6 "
" "	5-6 "
" "	1 1-3 "
" "	1 "
" "	1 1-2 "
" "	1 1-6 "

The average duration of the expelling force of the unmedicated heart is 3 2-24 hours, of the medicated heart 1 5-24 hours. Hence, then, if the medicated heart ceases in one-third of the time of the unmedicated heart, two-thirds of the force is destroyed; again, if the average beats of the unmedicated hearts at the expiration of an hour is 57 per minute, and for the medicated 33 per minute, a little less than one-half the frequency, is curtailed. Therefore it is apparent that two-thirds of the force and one-half the frequency are depressed or destroyed with full play of the physiological action of manaca. The action on the heart of the cat is as distinctive as in the frog, the pulse reducing from 120 to 90, and in two instances to 78 per minute. In every experiment the heart was dilated and flabby immediately after death.

In nine observations on cats and frogs (*Experiments* 39 to 47), the pneumogastrics were severed just before, during and after the exhibition of the drug. When cut before the ingestion of the drug, or after the access of the full physiological effects, no change in the drug action was observed, but if cut with the first sign of cardiac depression, a rise of four to six beats per minute followed. This, however, is temporary, and in five to ten minutes after, on comparison with other animals with unsevered vagi, the heart's beat will be equally depressed as if the vagi were intact.

In four experiments with the exposed heart I directly applied the fluid extract, after the administration of a lethal dose by the stomach, but the depression was not hastened nor its intensity more

pronounced. In three other experiments I applied only the fluid extract to the heart. In these cases the effect was hardly worthy of the term depression, for in 25 minutes the pulsations were but four to six beats slower than at the onset. Therefore, it is apparent that manacá has no direct influence upon the cardiac ganglia; and that the slight depression following its local use must be related to the systemic influence incident to absorption.

Summing up the determined factor for a final conclusion, we may fairly declare:

1. That the heart is slowly and persistently depressed in force and frequency.

2. That the vagi play no part in this action.

3. That the cardiac ganglia are neither stimulated nor depressed.

From whence, then, emanates the influence upon the heart? Look you unto the general action of the drug; see the slow invasion of the cardiac depression; see also the slow annihilation of the reflex force, when the one ebbs low, so also the other. Are they intimately related? Does the reflex force control or regulate the heart's pulsations? Most assuredly. Hermann and others have conceded that the conversion of potential into kinetic force resides in the cardiac reflex centre, and that the ratio of this conversion and liberation is the ratio of the cardiac pulsations. We have two score of times confirmed the relationship between the cardiac depression and the reflex depression. They progress *pari passu*. In consideration of this, we doubt not that the cardiac depression depends on the reduction of the activity in the reflex centre, thereby limiting the conversion of potential into kinetic force and retarding the "liberating force"; in other words, it diminishes cardiac power by prohibiting the conversion of stored force into working force, and inhibits frequency by limiting the frequency of the discharge of force.

On the capillary system the action is only secondary and wholly due to the cardiac failure. In nineteen animals I made repeated and careful ophthalmoscopic examination, which revealed only a slight retinal blanching with the invading cardiac failure. I also closely watched the capillaries in a frog's foot over a micrometer, but with negative results.

RESPIRATORY SYSTEM.

The breathing is quickly and permanently affected. In Experiment 1, 3 ss reduced, in eight minutes, the normal respiration of 48 to 12 per minute; in Experiment 2, ten minims reduced, in twenty-five minutes, the normal respiration of 48 to 24 per minute; in Experiment 3, five minims reduced, in thirty-five minutes, the normal respiration of 49 to 35 per minute. These proportions hold good with all the experiments. In seven special experiments I cut the vagi either before or after injection of the drug subcutaneously. When the drug action preceded the section, death immediately followed, but if the section preceded the drug action, the animal survived from fifteen to twenty-five minutes.

The respiration is peculiar; with the appearance of muscular spasm, the inspiration becomes jerky, cog-wheel like, probably in consequence of the muscular spasm of the chest. This soon ceases and merges into quickened inspiration with prolonged expiration. The diaphragm performs both acts from the onset of the secondary symptoms until death. The parallel between the respiration and pulse must be noticed. Both are depressed from the onset and proceed with almost equal fall until death, which always ensues from the failure of the respiration.

The operations on this system are the same as on the heart. The reflex function is at fault, it is held in abeyance and finally abolished.

SPECIAL SENSES.

Long before co-ordination is lost, the cat will deliberately walk off of the operating table and fall to the floor, yet in walking on the table it will avoid a book or other article placed in its pathway. The pupils are at this time partially dilated which fact accounts for the non-recognition of distance and the perception of an obscuring obstacle in its path. As stated, the retina is blanched when the heart failure is far advanced. Light is recognized even in advanced poisoning, the cat closing its eyes to protect them. The pupils are always strongly dilated and unaffected by light.

The hearing is unimpaired, the pet kitten attempting to respond to its name, notwithstanding the height of the physiological action.

Smell is likewise unimpaired, ammonia inhalation manifesting discomfort.

Sensibility is unaffected.

GLANDULAR SYSTEM.

Very early in the effects of moderate or lethal doses, the salivary gland is excited and the mouth filled with saliva. The cog-wheel respiration, twitching of the jaw and salivation all appear at once and of equal intensity, so that we cannot attribute ptyalism to the irritation of the moving jaw or the reverse.

The stomach after death contains considerable mucus even when the drug is administered subcutaneously. It partakes of a ropy nature and appears to be a mixture of saliva and gastric. The quantity of the former must necessarily be small as the mouth is continuously open after the first ten minutes of action, thus rendering swallowing nearly impossible. Therefore I am inclined to believe that the gastric glands are specifically excited. The liver is slightly congested after death and the duodenum contains some bile. Possibly this may depend upon venous congestion, but from its action on man, to be hereafter detailed I am lead to seriously question it. In a case of chronic poisoning (in a cat) of three days' duration I found this congestion far more intense than in acute poisoning.

When the drug is given for a few times, in large though non-fatal doses, the intestinal secretions are somewhat augmented in quantity, but in lethal doses no apparent change takes place.

The kidneys are freely stimulated. By small and repeated doses the urine is increased in quantity. This is most readily demonstrated on man. The writer found that fifteen drop doses, *t. i. d.*, increased the urine on the first day from the average of 1,000 cubic centimetres to 1200 c. c.; on the second day to 1250; on the fourth day to 1350 c. c.; where it remained stationary.

EFFECTS ON MAN.

The writer took 3 j of manacá fluid extract on a full stomach. The taste was not unpleasant and room left the mouth. Feeling no effect in twenty minutes he took 3 ss. In ten minutes I felt very restless, much as the animals appear. It was impossible to sit contented and read or write. I felt like exercise, so I walked one mile and a half. Before I had completed the last half mile, my leg felt heavy and tired, unusually so, and I was actually compelled to frequently stop and rest. On arriving home I laid upon a sofa for perhaps thirty minutes, feeling a peculiar tired sensation, not that of inordinate exercise, but more the sensation of laziness, as if it were an effort to move. In two hours from the last dose I felt perfectly well again. Towards night the saliva and urine were more than normally abundant, and at night I perspired quite freely. On the next day the bowels moved as if from a laxative—semi-fluid and containing a large quantity of greenish matter which I regarded as bile. The pulse and respiration were unaffected, the pupils, hearing, tactile sensation and reflex action perfectly normal.

Resumé. In the foregoing experimental inquiry we have ascertained,

1st, That there is no effect upon the brain.

2nd, That the special senses are uninfluenced.

3rd, The spinal cord is the chief field of action wherein (*a*) the motor centres are stimulated and (*b*) the reflex function is abolished in the full physiological effect.

4th, The cardiac reflex centre is depressed.

5th, The respiratory reflex centre is depressed.

6th, The glands are stimulated, especially the salivary, gastric, intestinal and cutaneous, the liver and the kidney.

7th, The duration of action is about three and one-half hours.

8th, The infusion prepared from the ground root contains the virtues of the drug.

Folia Juglandis Nigra, the Leaves of Black Walnut as a Remedy in Scrofulous and Cachectic Affections.

By Orlando C. Farquhar, M. D., Zanesville, O.

IN bringing to the notice of the profession the great medicinal value and curative properties possessed by the leaves of the common black walnut, I do so, not because of a vain notion, needing gratification only, in having my name placed upon the scroll of fame, as just one more discoverer of a new remedy. In this world of constant changes what multitudes of panaceas, and even systems have gone and are going to the tomb of the Capulets! A very capacious tomb it is; but it could not hold all its tenants, if some were not occasionally resurrected, to again appear on the stage, for many of the new remedies, and systems are really old acquaintances in the guise of a new suit, and with a new name. "Prove all things; hold fast that which is good" is as applicable to medicine as it is to morals or religion. I am well aware that the medical profession as a body, are notoriously slow to take hold of any new remedy, and introduce it into their practice. Perhaps there cannot be found a like condition of apathy, existing in any other of the professions, trades, or among the various artisans, as regards the adoption of anything that is new to them. Therefore I think it a self evident fact that there are no men more skeptical as a class than are physicians, whenever they scent any seeming innovation. This condition may possibly obtain from one of two causes, or both combined. First, the physician to whose attention any new remedy is directed may conclude that from its pure simplicity, and seeming commonness, that if the remedy really possessed healing and curative powers of any magnitude, these virtues should have been long since known to the fathers of medicine and have received the stamp of their approval. Since the remedy under consideration has not passed such a distinguished ordeal, it is to be hoped that the readers of this article will do better with it than to let it severely alone; and that they will at least show some evidence that they are not entirely satisfied with the certainties of all of the old remedies; and are desirious of learning some "new tricks." The second objection may consist of a peculiar conscientious sensitiveness toward the well being of the patient, in a measure over-balancing any desires that the physician might entertain towards the introduction of a new remedy in his practice of therapeutics upon any particular case, for fear that bad results to both physician and patient would be the only remuneration for taking one little step out of the old rut, and forward, in an attempt to keep up with the scientific demands, and medical progress of the times.

The precept of the skeptic is, practically, "doubt all things; hold fast to nothing but your doubts." He ever sits in his castle, well fortified against all the shafts of truth, sneering with self-satisfaction, equally at the rational beliefs and the changing delusions of the world around him, as if the one were as unfounded as the other. The only proper mode of practice, if it can be termed a *mode*, is the eclectic, which simply takes facts from whatever quarter they may come, whether they belong to any one system or not, and use them in the cure of disease. I wish to be correctly understood in this point. I have not said that there is no truth in any of the modes or systems which have prevailed. There is some truth in most of them, not to say all. The true eclectic will sift out from them whatever of truth he may find and use it, whether it has had a professional or a non-professional origin.

I care not whether it be a Trousseau, a Mitchell, a Wood, a Bache, a King, or Dr. Samuel Thompson; the latter, perhaps, with all of his ignorance and illiteracy, did as much toward medical reformation than any other one man. Growing out of his reformatory movement, facts were evolved concerning the curative properties of certain herbs, and it is these same facts that we rely upon in emergencies, and not the name and memory of the person who first introduced the remedy or facts to notice and use. The former belong to the literature of medicine; the latter to the domain of therapeutics. The obscurity of the personal reputation and knowledge of one who now-a-days

assumes to place before the profession a good, safe and reliable remedy for certain affections, is with many often a barrier to its introduction and proper testing. If some prominent American or foreign physician brings to the notice of the profession the therapeutic properties and uses of any new remedy or medicine, very many difficulties as to introduction, adoption and use speedily vanish, for the reason that the remedy has been indorsed by some distinguished professor, as possessing therapeutical merits, and its use recommended. Was it a professor who first used a cob-web as a hæmostatic? Was it a professor who first discovered the protective influences of vaccination? Had it not been for the experience with kine pox, of the ignorant milk-maid, the name of the immortal Jenner would perhaps have remained unsung to fame. A remedy possessing emetic properties of a highly satisfactory character, suffers no deterioration or abridgement of those properties because, perchance, some old woman doctress, or other illiterate person made the discovery. A learned professor could ascertain no more, but could in a scientific manner explain the *modus operandi* of the act of emesis.

The remedy that this article is intended to introduce to the attention of the readers of the THERAPEUTIC GAZETTE has been well tested and severely tried in very many obstinate cases. I am personally cognizant of very many cures, that an infusion of the leaves of the common black walnut, has performed after the skill, and prescriptions of many excellent physicians had signally failed. This remedy has never, to my knowledge, failed to cure or greatly benefit whenever used. That is saying a great deal for walnut leaves; and yet such is the truth; and "facts and figures are stubborn things." My father, Dr. E. A. Farquhar, Sr., has continuously used this remedy for the last quarter of a century. With a reputation and practice co-extensive with the boundaries of the state, he had frequent opportunities for testing the virtues of the remedy. As an alterative and depurative, possessing marked powers in the cure of all scrofulous and cachectic affections, its value has often been demonstrated. Syphilitic ulcerations and squamous diseases of the skin, soon yield to the effects of an infusion of the leaves of the black walnut. Chronic ulcers of the indolent kind have been cured with this remedy, after every other remedy had been exhausted, without benefit. Our plan has been to wash the parts affected, if external, two or three times daily with the infusion, and at the same time take it internally. In cases of syphilis, I often combine or add to the infusion an alcoholic solution of hydrargyrum corrosivum, with good results.

In like manner potass. iod. can be added in cases where we want the action of iodine and potash combined with a depurative alterant. I have certainly come to the conclusion that the curative powers of this remedy are remarkable among remedies recommended for the disease and conditions that I have mentioned. Not claiming to be the first to use and test the therapeutic value of this remedy, I shall quote from Braithwaite's Retrospect, for the year 1841, an article upon the use of this remedy, by M. Negrier, professor of the school at Angers, copied from Journal de Med. from Arch. Gen., June, 1841, Provincial Medical and Surgical Journal, July 17, 1841, page 304:

"M. Negrier has recently published an interesting memoir on the use of walnut leaves in scrofula, which he regards, after numerous experiments, as one of the best anti-scrofulous remedies that we possess. M. Negrier, as well as several other medical men at Angers, had long been in the habit of employing a decoction of walnut leaves as a lotion for scrofulous sores, etc., when he was appointed, in 1834, physician to the asylum for children abandoned by their parents; many of these unfortunate creatures suffered from scrofula. Bitters and the usual anti-scrofulous remedies were tried with little benefit. A few of the ulcers closed up in May, but reopened in November, and amongst twenty children, scarcely two cases of cure could be cited at the age of puberty. The author now resolved on trying the leaves of the walnut tree extensively; there were at that time seventeen scrofulous children in the establishment; nine were affected with swelling and caries of the bones; seven with scrofulous glands, in a state of ulceration; one had numerous scrofulous glands, but unbroken, about the neck, with very severe strumous ophthalmia. Each patient took, daily, two or three cups of an infusion of fresh walnut leaves, sweetened with a little honey; also a pill morning and evening, containing four grains of the extract, or an equivalent of the syrup. The sores were all washed with a strong decoction of the leaves, and covered with lint moistened with it. The regimen was not altered. The treatment was commenced in the spring. Ten days had scarcely passed over when the nurses remarked that the children had become more cheerful and noisy, they ate with better appetite, and a gradual improvement of the general health took place. The greater number of the children had suffered under scrofulous disease for years, and a few for six, eight, or ten years. After two months' treatment three patients were cured, and ten evidently improved; four obtained no benefit. After six months there were seven of them cured, five considerably improved, two stationary, and two dead of hydrocephalus and phthisis. Finally, after a lapse of eighteen months, ten children were completely cured, three nearly cured, and two in their original state. Every physician who has been in the habit of treating scrofula on a large scale must admit that these results are extremely favorable. In addition to the evidence thus adduced, M. Negrier gives an abridged account of fifty-six cases of scrofula where the same remedy was employed with considerable benefit. It required some length of time before the medicine affected the general health.

Ten of these patients were affected with scrofulous enlargements of the glands; the tumors seldom began to decrease before the end of fifty days; three patients were completely cured, and four others much relieved. Four cases of scrofulous ophthalmia were treated with the walnut leaves; in addition to the infusion and syrup, the following was employed:

℞ Decoction of walnut, ℥viij
Extract of belladonna, ℈j
Laudanum, ℈j.

M. The four cases were speedily cured.

Twenty cases of scrofulous ulcers were treated; fourteen were radically cured; four much improved; two died of other diseases during treatment; the period of treatment commonly extended over two to six months, and in a few severe cases over two years. The most effectual topical application was fine lint moistened with the decoction; in some cases the powdered leaves were sprinkled over unhealthy sores, and soon gave rise to vigorous granulations.

Nineteen patients were treated for scrofulous affections of the bones; the results were satisfactory, but, as might be expected, very slowly obtained.

To sum up, of fifty-six patients thirty-one were cured and had no relapse; eighteen were very remarkably improved, and many of them nearly cured; four remained stationary and four died.

M. Negrier concludes his memoir with the following directions for the preparations of walnut. The infusion is made with an ounce of leaves to twelve ounces of boiling water; it may be sweetened with sugar or the syrup presently to be noticed. Two or three cupfuls may be given daily, or even five. The decoction is made with a handful of the leaves boiled fifteen minutes in a quart of water. The extract may be made in the usual manner from the dried leaves. For the syrup eight grains of the extract are mixed with thirty-two scruples of common syrup; infants and young children may take two or three teaspoonfuls in the day; adults three drachms. The pills may be made of the extract, four grains in each; from two to four in the day."

Having given the article of M. Negrier in full, the reader may have noticed that the remedy used by him was, perhaps, the leaves of the English walnut, as in his article he does not mention *black* walnut. I think that the variety used at Angers was the English variety. At any rate it makes no difference, for the reason as has been stated in a former part of this article, that the extensive experience which Dr. E. A. Farquhar, Sr., and myself have had with the leaves of the black walnut, is sufficient evidence to us that the variety used by M. Negrier could not have given more satisfaction. I hope that the skeptic as to the efficiency of this remedy, will not attribute the beneficial results obtained from the decoction of walnut leaves, as due to the hydrargyrum and the potash iodide, in the cases where this combination was made. I was careful to learn the particulars concerning the cases where the additions of either one of the two remedies were made, and I invariably learned that both the mercury and iodide of potash had previously been given, before I introduced it in connection with the walnut. Consequently the search for the "mare's nest" will not apply to my cases, where the cure was completed with the additions mentioned.

Mr. Franz Ludwig Gehe, of the world renowned drug house of Gehe & Co., of Dresden, died on June 22, in the 72d year of his age. He combined to a notable degree business qualifications with scientific attainments.

Trinitro-Glycerin — Nitro-Glycerine — Glonoin, $C_3H_5(ONO_2)_3$.

By Joseph A. Stites, M. D.,* Belmont, Nye Co., Nevada.

WHEN equal parts of strong nitric acid and sulphuric acids are gradually added, in small portions at a time, and at a temperature kept below freezing, to glycerin, this is converted into a bright yellow liquid, which has remarkable explosive properties, and has received the name at the head of this article. Nitroglycerin was discovered about 21 years ago by Dr. Sobrero now a professor in Turin. It was after wards made a subject of study by Dr. de Vrij, of the Netherlands, Dr. Gladstone, and Dr. Kopp; but did not attract general attention until after 1864 when its capacities as an explosive agent became known. It is a yellow liquid (said to be colorless or slightly yellowish when pure); of a sp. gr. 1.525 to 1.6; inodorous; of a sweet, pungent, aromatic taste; very slightly soluble in water, but readily soluble in ether, alcohol and methylated spirit; not freezing above 4°F. when quite pure, (I. R. Wagner) but as it occurs in commerce, solidifying by continued exposure to a temperature of 46.4°F. and assuming the form of long needles, which it is dangerous to handle, as they explode violently when gently broken. In the liquid state, it does not inflame or explode by the mere contact of flame; but with concussion, or by touching it with red-hot iron, it explodes with great vehemence; detonating mixtures, or exploding gunpowder, in its near vicinity, produces the same effect. By keeping, it undergoes partial decomposition, and in confined vessels the pressure of the accumulated gases which result is sometimes so great as to cause its explosion upon the slightest concussion. Its explosive force greatly exceeds that of gunpowder. According to Nobel, one measure of the fluid explodes into 10384 measures of gas while one measure of gunpowder yields only 800 measures. It has, therefore, been much employed in exploding rocks, in mining, quarrying, road making, etc.

In order to render this explosive less dangerous to handle, it is now usually mixed with some inert substance, usually diatomaceous earth, in which form it is known as dynamite, etc. It has been lately used by the homœopaths under the name of glonoin.

Effects on the System.—Nitro-glycerine appears to act as a powerful but temporary stimulant both to the circulatory and nervous systems, causing increased frequency of pulse and severe headache, followed, if the dose be considerable, by symptoms of prostration, which are alarming from overdoses; but we have met with no account of a fatal termination in any instance. As a local application it is said to have little effect; and, to operate on the system, it must be absorbed. The idea has been suggested that nitrous oxide might be one of the results of its decomposition, and the cause of the symptoms; but these differ materially from the known effects of that agent. The dose required to effect the system is very small.

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Mr. J. M. Merrick experienced decided effects from one-fortieth of a drop; and in a case recorded by Mr. Field, a temporary loss of consciousness and other alarming symptoms of narcotic poisoning are said to have been produced by about the forty-fifth of a drop. Yet two drops of the poison have been taken with no other effect than slight confusion of the head; so that the drug would seem to be of extremely uncertain operation.

Mr. B. Sepuchardt, of Hanover, made experiments on himself, with the following results, taking a single drop: He felt, five minutes afterwards, a great deal of giddiness, attended with weakened vision, headache, with throbbing in the temples; a sense of weariness, sleepiness, a strong aromatic taste in the mouth, burning in the throat, and severe pain in the cardiac region. An hour afterwards, these symptoms having subsided, he was attempting to take another dose from a bottle of the nitro-glycerine by means of a glass tube, when accidently a large quantity entered the fauces; and, though he discharged most of it from the mouth, he must have swallowed a considerable portion, perhaps as much as ten drops. The previous symptoms returned so severely that he was compelled to lie down; and a half unconscious condition came on, which lasted several hours and left behind it a violent throbbing headache, sensitiveness to light, giddiness and universal trembling. At first there was increased heat and frequency of pulse, afterwards a feeling of coldness, with a burning sensation in the region of the heart, and nausea, but no vomiting. There were no symptoms of a convulsive character. Next day the effect had entirely ceased. (Am. Journal of Pharm., March, 1867, p. 164; Zeitschrift für Praktische Heilkund.) Inhalation of the vapors produces similar effects. Mr. Merrick experienced intense headache from this cause, with intolerance of light and feelings of general distress, faintness and exhaustion. The same symptoms have been experienced by workmen engaged in its preparation and use. Few trials have as yet been made with the drug on animals, and it has been shown that relatively very large doses are necessary to cause death. In poisonous doses the effects are similar to those of strychnine. (Witthaus Med. Chemistry, pp. 278, 279.)

Its Therapeutical Agency.—As yet we know very little of its merits or demerits. It has been tried with success in *tic douloureux* (neuralgia), cephalalgia, apoplexia, and in females where a slight stimulant is required. In neuralgia I have had marked success in every case; there was not a single failure where I administered this drug. I gave Parke, Davis & Co.'s 1-50 grain pill, one pill four times a day. With four doses the patient was entirely relieved. I generally persuaded the patient to keep taking the pills for a day or two, for fear the attack might be renewed, but as yet have never heard of them being again attacked. I have tried it in only one case of apoplexia, with marked success; there was a lapse of convulsions for three months.

The Michigan College of Medicine was opened on Tuesday, the 5th inst., with an address by Prof. Wyman to a large class.

The Public Health and the Dangers of Vaccination.

By William Tebb, London, Eng.

MEDICAL men who have gravely pronounced vaccination to be a *benign* operation, affording immunity from small-pox, and attended with no shadow of danger, are now reluctantly surrendering their positions one after another, but I am not aware that such surrender has been accompanied by any expression of penitence for the serious and fatal consequences which have so often attended the adoption of the popular prescription. Dr. Drysdale, one of the ablest and most persistent champions of vaccination in the Metropolis, in a recent letter to the London *Echo*, being hard pressed by Mr. P. A. Taylor, admits that "accidents" do occur, but in order to weaken the effect of such a damaging admission for "a benign operation," adds, "that their number in Great Britain and the United States, at all events, has been extremely few." And in proof of this comfortable conclusion the doctor quotes the experience of one of your medical authorities, Dr. H. A. Martin, of Boston, Mass., reputed to be one of the largest manufacturers and traders in vaccine virus in America, whose advertisements and circulars are in no respect inferior in extravagant promises to those of the great army of patent quack medicine vendors, whom he so successfully emulates. It must surprise Dr. Drysdale's friends (if anything is surprising in reference to the vaccine propaganda,) that so intelligent a writer should attach any importance to the negative evidence emanating from such a vitiated source. What trader in medical nostrums ever admitted evil consequences from the use of his specifics since the world began? Moreover evidence is not what a man has not seen, but what he has seen. Mr. Brudenell Carter, F. R. S., L. S. A., in the *Medical Examiner* for May 24th, 1877, referring to the most dreaded of all diseases, says, "that a large proportion of the cases of apparently inherited syphilis *are in reality vaccinal.*" And with such an interpreter it would be interesting to inquire what Dr. Drysdale and other champions of enforced vaccination make of the following list of authenticated cases of transmission of this one disease (vaccine syphilis)—alone published by the celebrated Lancereaux:

By Cerioli	40	At Rivalta	46
" Tassani	46	By Trousseau	1
" Surgeon B	19	" Maronni	34
" Hübner	8	" Devergie	1
" Marcolini	40	" Chassaignac	1
" Viani	2	" Herard	1
" Lecoq	2	" Adelasio	2
" Galigo	14	" Monell	1
		Total	258

To these may be added the following:

By Hutchinson	24	By Sebastian	1
" T. Smith	1	" Collins	2
" Hulke	1	" Fuqua	52
" Oldham	3	" Cullimore	1
At Lebus	18	In Algiers	58
By Depaul	59	Total	478

Dr. P. A. Desjardin gives full details in *La Science Libre*, No. 21 (including the names), of 58 young men of the 4th regiment of Zouaves, seriously infected with syphilis from vaccination performed by

the Military Surgeons at Algiers, December 30th, 1880, according to the French regulations.

If these cases are insufficient to show the dangers of vaccination, I beg leave to refer investigators to the revelation of a Parliamentary Return, No. 392, Session 2, dated 1880, as to which the entire English medical press have thought it prudent to preserve a profound and unbroken silence:

AVERAGE YEARLY DEATHS UNDER ONE YEAR OF AGE PER 1,000,000 BIRTHS.

England.	Syphilis.	Erysipelas.	Skin Diseases.	Pyæmia.	Scrofula.	Mesenteric Disease.
Voluntary Vaccination, 1847 to 1853.	564	817	183	*	351	2981
Obligatory Vaccination, 1853 to 1867.	1206	781	253	155	611	3371
Enforced Vaccination. 1867 to 1878.	1738	834	343	180	908	4373

* Not distinguished before 1862.

That is to say—that while the death rate of infants from all causes is declining, the death-rate from inoculable, and therefore vaccinal, diseases is increasing.

Nor is the danger from the use of animal virus less than that from the orthodox Jennerian arm to arm method as instituted by the author, which I shall be prepared to demonstrate in another communication. As this is a matter which so greatly concerns the public health, I venture to hope you will find room in your valuable journal for these painful details.

Abstracts from Meteorological Reports, Silver Cliff, Colorado.

By A. Comstock, M. D.

THE following is abstracted from the meteorological observations taken at this point during the months of April, May and June. I shall have occasion to refer to them in a future article:

ABOVE ZERO.

1882.	8 A. M.		6 P. M.	
Apl. 1.	40°	cloudy.	70°	cloudy.
" 2.	40°		67°	
" 3.	50°	cloudy.	58°	cloudy.
" 4.	40°		56°	
" 5.	36°		56°	
" 6.	42°		50°	
" 7.	40°	cloudy,	49°	cloudy.
" 8.	32°		60°	
" 9.	36°		60°	
" 10.	38°		60°	
" 11.	33°	snow.	45°	cloudy.
" 12.	34°		50°	
" 13.	31°	snow.	34°	cloudy.
" 14.	26°	cloudy.	58°	cloudy.
" 15.	29°		60°	
" 16.	40°		50°	
" 17.	32°	cloudy.	52°	cloudy.
" 18.	30°	cloudy.	53°	cloudy.
" 19.	33°		58°	
" 20.	40°		48°	
" 21.	30°		60°	
" 22.	25°		60°	
" 23.	40°		65°	
" 24.	40°		72°	
" 25.	50°		72°	
" 26.	42°		76°	
" 27.	44°		70°	
1882.	8 A. M.		6 P. M.	
April 28.	42°		50°	rain.
" 29.	41°	cloudy.	63°	cloudy.
" 30.	30°		68°	
May 1.	40°		62°	
" 2.	43°	cloudy.	72°	cloudy.
" 3.	45°	cloudy.	62°	cloudy.
" 4.	45°	cloudy.	65°	cloudy.
" 5.	45°	cloudy.	65°	cloudy.
" 6.	49°	rain.	40°	rain.
" 7.	45°	rain.	60°	rain.
" 8.	45°	cloudy.	55°	rain.
" 9.	42°	cloudy.	52°	rain.
" 10.	40°		61°	
" 11.	42°		67°	
" 12.	45°		57°	
" 13.	50°		64°	
" 14.	50°		66°	
" 15.	46°		65°	
" 16.	48°		67°	
" 17.	48°		62°	
" 18.	47°		70°	
" 19.	54°		52°	
" 20.	40°	snow.	46°	
" 21.	41°		50°	
" 22.	42°		62°	
" 23.	45°		60°	
May 24.	48°		64°	
" 25.	51°		70°	
" 26.	42°		62°	
" 27.	46°	cloudy.	52°	cloudy.
" 28.	45°		58°	
" 29.	42°		60°	
" 30.	45°		45°	snow.
" 31.	40°		53°	
June 1.	54°		65°	
" 2.	53°	rain.	59°	rain.
" 3.	45°		60°	
" 4.	50°		72°	
" 5.	50°	cloudy.	56°	cloudy.
" 6.	45°		65°	
" 7.	50°		72°	
" 8.	55°		70°	
" 9.	55°		68°	
" 10.	56°		73°	
" 11.	55°		68°	
" 12.	52°		66°	
" 13.	55°		71°	
" 14.	52°		75°	
" 15.	55°		76°	
" 16.	60°		72°	
" 17.	60°		74°	
" 18.	60°		76°	
" 19.	60°	cloudy.	57°	rain.
" 20.	60°		72°	
" 21.	60°		73°	
" 22.	61°		77°	
" 23.	60°		78°	
" 24.	62°		78°	
" 25.	63°		73°	
" 26.	61°		78°	
" 27.	66°	cloudy.	68°	cloudy.
" 28.	62°		68°	rain.
" 29.	65°		67°	rain.
" 30.	60°	cloudy.	70°	rain.

What is Wrong with Our Emmenagogues?*

By Charles H. Miller, M. D, Peabody, Kansas.

FROM the moment I first started out in the practice of medicine I have had continual trouble with our usual line of emmenagogues, prescribing first one and then the other, finally a combination of them all, and such others, besides, as were highly recommended by all the old wives in the neighborhood, or suggested to me by my

*Our readers are invited to reply to Dr. Miller's query in our columns.—Ed.]

professional friends, or spoken of by the medical literature within reach, yet meeting, constantly, with signal defeat in all my trials. In seven years of active practice I have never known a case for whom I prescribed any of the drugs known as emmenagogue, to report a successful issue from the prescription. Now this is not only severely truthful but highly deplorable, and I would like to know the cause, as well as the fact, if such exists, if any other professional brother within the circulation of this journal has had like experience with these drugs.

Feeling somewhat timid and doubtful with my first cases, seeking safety by all means possible, under the circumstances, I took my chances with the ancient tincture of aloes and myrrh of the U. S. Dispensatory, prescribing a teaspoonful in a gill of hot water, sweetened, every hour, in connection with the usual hot cloths and hip baths. Signal failure this from first to last. Have never known it to do any good under any circumstances, however slight or trivial. Abandoned this during the year and next resorted to the fluid extract of ergot, such as apothecaries usually kept.

Ergot, besides being dangerous from a possible excessive use in the hands of the ignorant, careless, or designing, never rendered more satisfaction than a "feint," causing a sense of warmth and fullness in the pelvis, a feeling of distress in the back, a disordered condition of the stomach and final nausea from the excessive "sweetness" of the drug. So I abandoned this, also, and sought the desired effect in a combination after this fashion:

℞ Tinct. aloe et myrrh, ʒj.
Ext. ergot, fld. ʒiss.
Syr. simplicis q. s., ʒjv.

M.. Sig. Teaspoonful every hour or two.

Trials extending over a year convinced me that this was not the proper thing either. Possibly it lacked a little iron; so I concluded that something in the nature of a pill might answer my purpose better, and, after many attempts with pills, I finally produced the following:

℞ Ext. hellebori nig., ℈i.
Ferri lact., ℈i.
Ol. tanaceti, gtt. xxx.
Ol. savinæ, gtt. xxx.
Gum myrrh, ℈i.
Pulv. aloe soc., ℈i.

M. Fiant pil., No. XXX. Sig. One pill five or six times daily.

In due season, finding that this was about as ineffectual as the preceding, and becoming somewhat disgusted and angry, I thought I would next resort to something stronger, with the oils as a basis, yet making the whole to consist of a combination of what had preceded. This was a regular "grape and canister" shot, and was got off in the following style:

℞ Ol. savinæ, ʒiss.
Ol. tanaceti, ʒiss.
Ext. fld. ergot, ʒiss.
Ext. fld. gossypii, ʒiss.
Tr. hellebori nig., ʒi.
Syr. acaciæ q. s., ʒv.

M. Sig.: Teaspoonful every 2 or 3 hours.

Failing signally and effectually with all, however, I have long since let nature take her own course, suggesting the hot cloths and hip baths as an aid, if needed, with a little soothing "catnip" tea. Iron has but once, and never afterwards, produced the desired result, the dialysed form being employed in a protracted case of chronic articular rheumatism, the subject being a young woman, sadly anæmic. Requiring it again, however, a month or two later, it failed, although given in large and small quantities, for some length of time, and in every possible form. In view of these facts, therefore, I insert the heading of this article, "What is wrong with our emmenagogues?"

August 9th, 1882.

Manaca in Rheumatism.

W. J. Pepper, M. D., Connersville, Ind.

AS a remedy in rheumatism this drug has proven specially efficacious in my hands, but more notably in a case of inflammatory rheumatism.

Mrs. ——, æt. 35, had been bedridden for three months, with inflammatory rheumatism. All the various remedies, such as guaiacum, salicylic acid, potassium bromide, hypodermic injections of morphia, etc., had been used, previous to my being called in, without success.

I immediately resorted to the manacá as in the following prescription:

℞ Fluid ext. manaca, gtt. 40
Syrup simp., q. s. ft. ʒj.

M. ft. mistura.

Sig. Teaspoonful every three hours until the peculiar effects of the drug are produced.

These peculiar effects are a sense of tightness and fullness about the head with profuse perspiration.

The first prescription produced none of the special symptoms so I renewed the medicine, doubling the dose of manaca thus:

℞ Fluid extract manacá, gtt. 80
Syrup simp., q. s. ft. ʒj.

M. ft. mistura.

Sig. Teaspoonful every three hours until the peculiar effects of the drug are produced.

This prescription sufficed, the special symptoms of the drug were produced and the patient recovered within a week.

The manacá, after the special symptoms had been produced, was continued in ten drop doses three times a day for a week.

It seemed as if all symptoms of rheumatism disappeared directly after the peculiar effects of the drug manifested themselves by head symptoms, etc., and recovery was almost immediate, but for reasons of safety I continued to administer it in ten drop doses three times a day, for a week, after which time all symptoms of her peculiar disease had disappeared.

I have always found in administering the drug, manacá, that it was necessary to have the peculiar effects of the drug, as exhibited by head symptoms, etc., show before any curative effect was experienced.

Cascara Sagrada.

By H. Stieren, M. D., Mason, W. Va.

GENERALLY not over-sanguine in my expectations of the sometimes highly extolled effects of new drugs, I yet saw so much praise bestowed on Cascara Sagrada (Rhamnus Purshiana) that last winter I concluded to give the fluid extract, as obtained from Parke, Davis & Co., a thorough trial.

Mrs. K., about 47 years old, whom I have known for nearly 14 years, has presented about the worst case of habitual costiveness that has occurred to me in a more than 28 years' extensive practice. Neither the most diversified purgatives and even drastics, nor belladonna and nux vomica, could afford more than a slight temporary relief, and even then she had often to resort to doses much larger than directed by me. So I prescribed for her fluid Extract Cascara Sagrada, Tinct. Rhei simpl., each 1 oz., a teaspoonful to be taken night and morning. The first dose she took on a Monday night before retiring, the second on Tuesday morning, without any effect during Tuesday, when she took another teaspoonful on Tuesday night, and one on Wednesday morning. By about 10 o'clock a.m. on the same day she had the first, copious passage, followed by two more during the day, feeling, as she informed me, better and easier than she had for many years. For the balance of that week she had no more need of the medicine, enjoying an easy passage every morning till Sunday, when she was obliged to take another dose at night with so much benefit as not to necessitate any more the next morning. About seven months have elapsed since, but the woman is so far regular now that, should a temporary constipation of a few days recur, one teaspoonful of the above mixture at bed-time will remedy it instanter. Cascara now boasts of an important place in my materia medica.

Correspondence.

Homœopathy, What Is It?

I am a subscriber to the THERAPEUTIC GAZETTE ever since I saw a number of it for the first time, and from all I could notice I think it is striving to deal justly with all the contending medical parties. This is the reason why I apply for a little space in its columns for a delivery in homœopathy.

It was by an advertisement in the THERAPEUTIC GAZETTE that I was induced to write for a book entitled "Homœopathy: What Is It?" (Detroit, 1881.) I got it and read it through and over again, and finally wondered not a little how "doctors," i. e., learned men, should appreciate it so very much as claimed in that advertisement; I wondered still more that learned men should so easily be satisfied where dogmatical matters come into play.

The very first thing that struck me upon a first reading is that its citations are gleaned quite exclusively from older writers of the homœopathic faith, avoiding carefully everything written or established by newer ones—certainly very singular in a book of this kind! If such a course of narrowness was contemplated before writing the volume, it would have been more honorable to the author not to assure the reader so repeatedly of his sincerity and fairness in all his dealings on the subject.

To enumerate and combat every single error (or what else it may be called by any erudite reader), in that book, would take up more space than any periodical could permit; so I have to confine myself to its general outlines. This limit of space is also the reason why I will silently and charitably pass over what the author says of Hahnemann's Curriculum Vitæ, though he, the author, deserves the severest reproach for the malice with which he depicts the very frequent changes of domicile to which Hahnemann was constantly driven. And driven by whom? By nobody else than the then "Regulars," and their never ending prosecutions! This can be proven up to the present hour by bushels of legal papers, still existing in many of the German public and penal courts. But let us proceed.

I enter at once the arena against the main and leading topic of the book, that the nonsense and nothingness of homœopathic doctrines and practices can be demonstrated and established by the (apparent) unsettledness of the opinions and theories of the writers of this school themselves.

If the author of the book, Dr. A. B. Palmer, of Ann Arbor, had a sincere and candid purpose in view when writing it, why does he ever and ever dwell only on the writings of Hahnemann himself and his immediate followers, or some few later ones? Why does he nowhere even mention the progress upon the original ideas of Hahnemann within the last fifteen years? Hahnemann, the founder of what is now called Homœopathy, lived and wrote and struggled at a time when the whole world—east and west—was whirling in one grand turmoil, socially, politically, scientifically. Sciences particularly were just then beginning to try to get their baby-shoes off, and many a dogma was then believed in which was quite conformable to the development of the times, but which would not stand the tests which have to be applied now. This was 80 or 90 years ago, and the question at issue is, what use is it to ridicule now-a-days the candid confessions of earlier homœopathic writers, that Hahnemann has decidedly erred in so many of his suppositions and teachings? Is it manly, honest, generous, to use such confessions and corrections as an artful lever to overthrow the whole fabric? Do not just such confessions and corrections demonstrate an innate impulse to improve matters? What would our stalwart allopathic author, Dr. A. B. Palmer, say of an homœopath who would cite against him and his school, in 1881, the writings of Galen, the father of the present "regular" system, or of Glauber, Todd, Schilling, etc.?—Dr. Palmer dwells with great amusement and gusto on homœopathic dilutions and the host of "symptoms," attributed to drug effects and mentioned by homœopathic writers, and he ridicules them in a way not very consistent with the sincerity which he promises to use in the treatment of his subject. He seems not to know,—or more likely he will not know—the fact, that the correctness of the dilution-theory as well as nearly all such symptoms have been tested over again and again, sifted, reduced, simplified. "If"—he says on page 42—"Iodine cures goitre, it should, according to the homœopathic law, be able to cause it. But it does not." This single sentence shows to any educated homœopath that Dr. Palmer never had a clear idea as to how pathogenetic and

curative symptoms of the homœopathic materia medica are to be understood and used, and this single sentence deprives him of the right to judge of, and to criticise homœopathic therapeutics as they stand to-day. If an allopath prescribes—at the present time—Peruvian bark, he does so because,—well because it was always used in this and in that disease; he heard so, he read so, he was advised to do so, in short, he prescribes it because the whole "regular" brotherhood does the same. An educated homœopath—on the other hand—uses Peruvian bark because verified provings of this drug have quite evidently shown, that it acts especially upon that portion of the ganglionic nervous system, which presides over the functions of vegetation; because it alters quantity and quality of the blood; because in shows its most decided relation to liver and spleen, etc., etc. He will never use it in sciatica, for example, because there are no relations to the sciatic nerve, nor, consequently any symptoms in sciatica to prompt the use of cinchona there. In the common routine of allopathic practice cinchona and quinine are used in sciatica; I can prove this by numerous prescriptions in my possession. By what logic it is so I cannot understand; probably some one suggested it a long while ago and others fell in—even because they were told to do so. Never heard of any body to have been cured of sciatica by Peruvian bark!

Those who will be posted in medical matters can easily know that an educated homœopath of to-day must be fully acquainted with the properties of his medicines, as well as with anatomy, physiology, pathology, etc., etc., and that he must understand how to use the exhibition of pathological symptoms and how to trace them back to their proper origin. He cannot say my greatgrandfather used this and that for this and that, so I will try it also. If it cures—well, all right; if it does not—sorry, but I cannot help it! He reasons and says: this or that drug has its especial sphere of action on this or that nerve or structure, etc.; its most prominent pathogenetic and curative symptoms are so and so. Will all this in its full ensemble correspond with, and cover the symptoms of the individual case just at hand? Hahnemann in his time, and his earlier followers, reasoned differently, and, because their disciples of to-day have acquired and practice a more refined theory of the whole system, Dr. Palmer dictates authoritatively that they are no longer homœopaths, and that they demonstrate themselves the fallacy of the whole school. That means, in other words, a system, an idea, a school, etc., must fall asunder as soon as any improvement therein is made!

Now, if this be true—and Dr. Palmer lays a particular stress on it that it is—then the "regular" therapeutics must be the most solid system in the world. Let us see what confessed believers in the old school have to say about it—not fifty years ago, but at the very present time. Dr. Curl, in Science in Therapeutics, says: "That this was the way in those ancient times (prescribing by the old Babylonians and Egyptians, thousands of years ago), is not to be wondered at, but that at the present time it is the same, is a sad reproach to all concerned."—THERAPEUTIC GAZETTE, July, 1882, page 249.

Dr. R. S. Rutherford (Ther. Gaz., Aug., 1882, page 309) says in "Thoughts on Therapeutics:" "I am let to believe, by my short experience in medicine, that there is a large percentage—more than half—of our physicians who are not as well informed in the actions of medicines that they are giving every day, as they are in other branches of the healing art, with which they have far less to do." And: "We are too prone to employ this or that therapeutic agent, simply because we see it in the works of our standard authors, or in the medical literature of the day." (!!!)

"It is a notorious fact, that students are every year graduated without having ever even seen a sample of the majority of our leading drugs." * * * "They (the properties of drugs and their relations to the human system, etc.), are neither taught in our medical schools, nor is a knowledge of them in the possession of one practitioner in a thousand."—THERAPEUTIC GAZETTE, Nov., 1881, page 422.

Will Dr. A. B. Palmer, of Ann Arbor, contradict? If such is the state of things in his own house, had he not better leave stone-throwing at others alone?

Is it to be wondered at, when thinking men of all ages struggled to profoundly clean out that Augean stable called "Therapeutics?" Homœopathy may be—and really is—still very imperfect; but then, and anyway, its therapeutical agents as far as they go now-a-days, are thoroughly known in all their relations to the healthy and the diseased system, and that is by far more than the old school ever could, or can now, boast of. The proper use of the proper remedy in the proper place is the end and aim of the whole healing art, at least it ought to be!

There is no mental or manual production of man which is not subject to—or capable at least of—improvement, even down to the very fundamentals. Volta did not dream of what Voltaism now; Franklin had no idea of a Holtz machine; Watt would feel his heart jumping, could he see all the marvels of steam power accomplished step by step up to to-day; Hahnemann should stand aghast and silenced had he to dispute now his original thoughts and writings with men of his own school, enlightened by the results of a general scientific advance. And poor Galen—well Galen would get mad to see his disciples remain and grope still in the dark on therapeutics, while everything else in the world is moving, developing, progressing!

What is the corner-stone of homœopathy, the fundamental principle which separates it from the so-called "regular" school? It is the one grand conception, that disease is the result of an overstimulation or of lack of a proper stimulation in the nerve centres, organs, tissues, and that it takes very little medicine to restore a healthful equilibrium, if only this little is the right one and in full relation to the parts affected. Everything else in homœopathic theories and practice is purely arbitrary, as soon as it reaches beyond the general dogma, that any medicine selected must have a decided influence upon the nerves, organs, etc., involved, fully similar to that which prompted the inroad of the disease. This is the homœopathy of to-day, and this is, consequently, the very point where the new school must separate from the old one, the latter taking for the cause of morbid conditions what the former declares to be the natural sequence of the real cause. There is no use to discourse about this here. Those who know believe in it anyway, while others will do better to consult other and better sources to get a clear insight in modern homœopathy. So much is certain, Dr. Palmer elaborates in his book very cleverly what homœopathy is not, leaving it to his readers

to guess at what it really might be. The same conclusion holds good concerning the impending "disintegration of the homœopathic system," of which he so confidently speaks in the very first four lines of his book. The Boston Journal of Chemistry, July, 1882, page 96, thinks differently; it has there an item headed "Progress of Homœopathy," which may also cause some reflection on the point whether the success in homœopathic practice is so utterly a delusion as Dr. Palmer desperately strives to demonstrate. I myself received January last a request from a private citizen of St. Gall, Switzerland, to send over some good homœopath, as the two who were already settled there "meet with so significant a success that they cannot master the increasing decline from the regulars, although they feed their patients exclusively on little globules and watery solutions." (Literally translated.)

A quite singular or particular judge is Dr. Palmer anyway. Says he (page 63) that an homœopath must stick fully and unreservedly to all that Hahnemann believed eighty years ago, to "Hahnemann's homœopathy," else he is no homœopath at all. On the other hand the "regular" physicians "may differ in various theoretical and practical questions," and "the science of medicine"—he speaks of the "regular" only, of course, —"is constantly receiving accessions of new facts and constantly discovering and devising new methods of procedure." What kind of a logic that is, granting to one party an unlimited right and freedom in its believings, discoveries and methods without disturbing its "regularity" at all, while denying the same rights to the other and fettering it totally to bygone ages; this judicial logic, I confess freely, overreaches by far my humble mental powers. Some forebodings will softly creep up my back that I am to lose my case, do what I will, if Dr. Palmer is to be my judge and that I had better apply to another court where this species of practice may be quite unknown.

I think Dr. Palmer would have accomplished a really grand thing had he written an elaborate sermon only on the last six lines of his book, the single purely practical thought in the whole volume of 109 pages. May his genius prompt him to do so some other time!

I really and sincerely wish that this book of Dr. Palmer might be read by the whole medical fraternity all over the land. It is so full of errors, misrepresentations and curious conceptions, that certainly no one can help saluting its author with: *Si tacuisses, philosophus mansisses!*

F. LENGGENHAGER

UTICA, N. Y., August, 1882.

The Tomato.

It may be of interest to you to note the article in the marked copy of the Australian Medical Journal which I send you on the subject of the tomato. Being naturally slow to resort to any thing new in the way of medicines on no better authority than the unsupported claim of any one person, I hesitated for some time before resorting to the fluid extract of tomato in a very obstinate case of nursing sore mouth which had resisted the chlorate of potassium and the biniodide of mercury, which latter remedy I had come to regard as well nigh a specific in such cases. The effect of the fluid extract of tomato, used after the manner suggested by Dr. Griffith, its introducer, as a remedy in this affection, was very promptly efficacious. I have had occasion to prescribe the drug in another case, in which the results were equally satisfactory.

These two cases may not be absolutely convincing of the value of tomato, nor are they intended so to be, but they are submitted as evidence for the defense, against the ridicule of this "Poor Tomato," contained in a recent article in an eastern medical journal which came to my notice.

I would suggest that the article to which I call your attention furnishes a very satisfactory rationale of the efficacy of the drug in such affections of the mouth. It may serve to secure to the "Poor Tomato" a little honor even in its own country.

J. J. MULHERON, M. D.

DETROIT, August 21, 1882.

Blessed Thistle (Cnicus Benedictus.)

MR. EDITOR:—I send you a specimen of a plant that is used by the old women with great success, so they say, in amenorrhœa, dysmenorrhœa, etc. The whole plant is used, put in whiskey, and given by the tablespoonful every hour or so. The specimen is a species of thistle, and goes by the name of "maiden thistle." Please let me know the botanical name. R. F. EVANS, M. D.

SHELBVVILLE, Tenn., August 12, 1882.

[The plant is cnicus benedictus, Gærtn. (*centaurea benedicta Lin.*), known in pharmacy as carduus benedictus, blessed thistle, holy thistle. (We do not find Dr. Evans's ynonym of "maiden thistle" in the books). Native in Western Asia and Southeastern Europe, sparingly naturalized in the United States. Anciently held in high esteem as a remedy in a very great variety of disorders, but is dismissed with a very few words by recent writers. Stillé and Maisch call it "a bitter tonic, most nearly resembling dandelion or columbo," and adds that "it may be used in atonic dyspepsia, preferably, perhaps, in cases attended with hepatic congestion." A fluid extract is prepared from the tops, and is for sale by druggists.—ED.]

In the August number of the THERAPEUTIC GAZETTE I observed a communication from "F. Lenggenhager, M. D., Utica, N. Y.," relative to poisoning by rhus tox. He gives his remedy as being the third dilution of belladonna, 10 drops in a tumblerful of water, a teaspoonful every two hours. He further states that it is *the* proper antidote for rhus tox.. if the homœopathic preparation is used, but the doctor is not content to stop here, but goes on to say that "it needs not much to see clearly that it (homœopathy) is *the only* scientific mode of treatment"; and again, "if allopaths did really and profoundly know what homœopathy is, there would not be any more allopaths." The doctor must certainly give allopaths a very low position on the ladder of medical science, and as certainly accuses them of a very scanty knowledge of his principle of cure, for he says "it needs *not much* to see clearly," etc., and again, "*if they did know*," etc., "there would not be any more allopaths."

Hear, O shades of Galen, what a sweeping statement! Have allopaths been groping in the dark while the crown of honor and glory has been raised from their head and placed upon the princely brow of other potentates? Have the pearls been glittering before swine until the disciples of Hahnemann have picked them up?

Doctor, will you explain in the THERAPEUTIC GAZETTE why you consider homœopathy *the only* scientific mode of treatment? If you consider your statement correct, you certainly owe an explanation to the readers of the journal in which it has been published. The present age demands the highest recognition of science in medicine, and statements accompanied with the proof. This is a question bearing on therapeutics, and probably will be of interest to the readers of this journal.

GEO. F. HUNTER, M. D.

HOLLY, Mich.

The Therapeutic Gazette

WM. BRODIE, M. D, Editor.

F. E. STEWART, Ph, G., M. D., Associate Editor.

DETROIT, MICH., SEPT. 15, 1882.

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The Hygienic Treatment of Consumption.

IT is barely possible that the experiments of Koch and his alleged discovery of the bacillus tuberculi are leading us to the brink of a new departure in the therapeutics of consumption. So fruitless, however, have been the efforts heretofore put forth in the modern history of the race, that we are constrained to be somewhat skeptical as to the result, but this same fruitlessness prompts us to put our hand into the hand of almost anyone who claims to have discovered a new way, and allow him to blindly lead us on, if haply the light which he sees ahead may not prove an *ignis fatuus*.

Pending the discovery of the means which may destroy or prevent the development of the as yet somewhat hypothetical bacillus, we shall still cling to our belief that the prophylaxis, as well as the cure of consumption, will be found to reside alone in a perfect hygiene.

The great question to be decided in the treatment of the disease is whether it is the local manifestation of a constitutional dyscrasia, or is itself primarily the disease. The answer to this question must determine both the line of the treatment and to an extent, also, the individual drugs prescribed. We believe it to be generally conceded by those who have given this subject more than the cursory consideration which is alone possible by the general practitioner, that there is first a constitutional dyscrasia and that it finds expression in the affection of the lung. It is certainly by following the treatment suggested by this view that the greatest success has been achieved in treatment. It is true the local difficulty also reacts on the constitution, and remedies directed to the relief of the former cannot be ignored with impunity, but such remedies must always be of secondary importance in all other treatment than that which is simply palliative, and conducted with a view to euthanasia.

The great desideratum in the treatment of consumption is, therefore, to place the system in such a condition as shall enable it to resist the development of the tendency to local lesion, and inasmuch as resistance to all morbific influences is dependent on a condition of good general health, the means both of prophylaxis and cure, must be such as may best conserve vital processes and best secure proper functional activity. Usually the first symptom which reveals itself in a case of consumption is a failure of the function of digestion, including the appetite. Frequently this is directly due to bad hygienic conditions and in such cases reference must, of course, be had to these. It is essential in this connection to secure a proper supply of pure air, and if an absolutely out-door life (the best of all prophylactic and, perhaps, curative measures) be impracticable, ventilation must be made as nearly perfect as may be. The lungs are important organs of excretion, and when their function is interfered with either through lack of a proper supply of oxygen or through the presence of carbonic acid gas, the blood fails to discharge the deleterious products of waste, which being retained work their mischievous effects. In proportion, also, as the lungs have become impaired is the demand for pure air increased, and it is a fatal error to seek through any conception of kindness to deny the victim an unlimited supply. The demand for fresh air should be increased by exercise within the limits of exhaustion, and one of the most pernicious of the many theories which have at various times held sway, has been that which insisted on the necessity of treating the lung as one would treat an inflamed tissue, namely, by giving it rest. We have known of instances in which cicatrization of cavities in the lung has taken place under a regimen of active out-door exercise, and doubtless such cases can be corroborated in the experience of many of our readers. A strong will, strong enough to overcome the almost-all conquering desire for repose experienced by most consumptives, is indeed almost a *sine qua non* in the successful treatment of the disease. By such exercise the desire for food is, moreover, increased, and the process of digestion being also facilitated, the demand which the wasting disease makes on the system is most successfully supplied. We have little faith in the plan which insists on the patient's eating set articles of diet. We believe that, as a rule, that particular article is best which the patient most desires. The appetite, if not an infallible guide to the dietary, is at least less apt to give erroneous directions than are the theories of the laboratory. Nature may occasionally err in this matter, but the error may be more largely due than we are aware to an improper conception of her instructions. When the consumptive has no desire for fats, or when fats are positively repugnant, it has been found in practice to be a questionable procedure to insist on his swallowing cod liver oil and other oily substances. If, however, in the case of cod liver oil, the oil has been emulsified and otherwise rendered palatable, the objection to its use has been largely removed. It is rich in carbon, and, if appropriated, is a valuable article of diet; but any repugnance to it on the part of the patient probably interferes with its digestion and assimilation. While it

may be important, it is not so much so as the keeping of the stomach in a condition in which it is best calculated to prepare any food which may be desired. We have recently heard much of the "Salisbury method" in the treatment of consumption. The essential point in this method is abstention from starchy food, the theory being that such food undergoes fermentation and that the spores are absorbed, and after being taken into the circulation induce fermentative changes there. The theory is an ingenious one, but as yet lacks the evidence which the crucial tests of experience can alone furnish, to establish it. Until such evidence has been adduced we shall not interdict the use of starchy food, provided the patient desires it.

When the digestive powers begin to fail they may be stimulated and strengthened by art, and pending this improvement the digestive process may be facilitated by aids in the shape of physiological remedies. We have in pepsin and extract of malt two of such remedies, the former assisting in the digestion of animal food, and the latter in that of starch. These agents are, in a sense, not medicines but rather physiological foods, supplying indeed ingredients to the digestive juices, lacking which digestion fails. They should be preceded and accompanied by the simple bitter tonics and reconstructive tonics.

We believe that the above outline embraces suggestions which are too often disregarded in the attempts at medication for the relief of the local lesion.

The skin is another organ of excretion, attention to which is of very great importance in the treatment of consumption. It should receive especial care, and local treatment. This treatment should consist chiefly in baths and friction of such a nature as is best calcutated to improve its tonicity. An atonic condition of the skin predisposes to colds, which it is one of the most important ends of treatment to avoid. No routine method of bathing can be prescribed, and the practitioner will find a test of his good judgment in the adaptation of the temperature of the water, its mineral or other constituents, and the degree of friction, massage, etc., best calculated to restore the lost tonicity of the skin.

We would not have it inferred from the above that medicines should be banished from the treatment of consumption. They are at times indispensable for certain complications, and during the whole course of the disease there is seldom a time when some such indication does not present. We shall in our next touch on some of the remedies called for by the manifold complications.

Psychology in Medicine.

THAT it is not all of medical practice to give drugs, even though such giving be after the most scientific and approved methods and based on a substantial knowledge of the fundamentals, is a fact to which all practitioners can bear testimony. It is a fact, moreover, which has caused many an honest but misguided physician to rail at the profession and to assert that success in it is not based so much on science as on deceit. It is by no means an unusual thing to meet thoroughly educated men in all the divisions of medicine who fail of the usual standards of success, in communities in which others of far inferior attainments, have won both esteem and wealth This can only be accounted for on the fact that there is something beyond the scientific, that there is that in the human being which neither scalpe, nor test-tube, nor crucible may reveal—the incorporeal—which, while it may be affected by the physical, is still in an important sense and to an important degree independent of it. The physician who ignores this fact is doomed to failure, and it by no means follows that he who recognizes it in his practice is either dishonest or a trickster, building his success on the foibles of the ignorant. The scientist does not create, he merely discovers and places himself in the line of nature's activities. If, therefore, he discovers the existence in human nature of the element indicated, it is not for him to seek to eliminate it, but to utilize it to the accomplishment of the highest good.

The physician must be a student of the workings of the human mind; he must be a psychologist. He will find in this line much which can be revealed in no other way, and failing to find which he fails to be of the most service, both to himself and to his patient. Neither the art of therapeutics nor the art of success can afford to sacrifice the unseen to the seen. While to handle the strictly material is more satisfactory to most minds than to grope after the intangible, the latter must not, on that account, be unsought. The physician who seeks to eliminate the mind as an element in the study of disease throws away one of the most important means to the end he has in view. It may be that man is but an animal differing from all others in the fact that in him the original protoplasm has gone on to a higher sphere of development in the process of evolution, but we must regard him in our treatment of his ailments as an animal *plus* something. It may be that the seat of his emotions is in his viscera, but we all know that these viscera, originally healthy, are susceptible of functional disturbance, and even disease, by primary excitation of the emotions. If, then, the intangible emotions are thus effective in influencing the material viscera, the importance of the study of the former, to both prophylaxis and cure, is manifest. This must be conceded by the most materialistic of utilitarians. If body and mind are inseparable in health they are not less so in disease, and the most inflexible materialist will scarcely deny that the former may be primarily affected by the workings of the latter.

The influence of the physician's presence in the sick room and the difference of such influence as exerted by different persons, no one has failed to recognize, and, though it be one of the most intangible of influences it is one of great potency. It may not be literally true that such intangible influence, like the other imponderable agencies in nature, is the most powerful in the treatment of the sick, but that it often favorably affects the vital processes when drugs have failed, is an indisputable fact. The power of exerting this influence may be cultivated and it should be one of the aims of the physician's

education to discover first how to detect the mental peculiarities of his patient and then to adapt himself to them,—to be, in short, and in a proper sense of the phrase, all things to all men, that some may be saved. In order to be prepared to thus adapt himself to all classes and conditions of men, the physician should bring to the practice of his profession a well trained, refined and educated mind, for without these he will find it impossible to enter into the sympathies and feelings of the better class of his patients.

The profession of medicine is one of the most comprehensive in its bearings, and has in it the means of the greatest amount of usefulness, but in order to accomplish this its practitioners must become also psychologists. In the language of Hinton: "More than ever now the physician must mave knowledge of the soul; must feel, with finer senses, other pulses; and measure heats and chills which no thermometer can gauge."

Sanitation and Physicians' Incomes.

THERE can scarcely be any diversity of opinion regarding the benefits which accrue to the community from the efforts of sanitarians. The interests of the public are undoubtedly much more effectually subserved by the prevention of disease than by its cure after it has attacked the individual, and the physician who devotes his energies to prophylaxis is a greater benefactor than he who comes in to stay the ravages of disease by the exhibition of therapeutic agents. This is a truism which even a layman cannot dispute, but which few, if any, are willing to follow to its logical conclusion, to wit, the remuneration of him who prevents as well as of him who cures disease. There is more joy in the household over one sick person made well than over ninety and nine well persons who have no need of a recovery, and there is certainly much more money in it for the doctor.

The medical is above all professions, a humane profession, and whether or not the motives of its practitioners be philanthropy, pure and unalloyed, the fact remains that it is their peculiar office to relieve suffering. It is, perhaps a little incongruous to associate philanthropy with personal gain; the idea of helping another in order that he may help you, savors of a selfishness which is not in keeping with a higher philanthropy. We are able, however, should we desire so to do, to offset any querulous objections to our calling on that score, by the quotation from the highest authority: "The workman is worthy of his hire." But, as we take it, there are few physicians in these latter days who follow medicine from purely altruistic motives, and there are, moreover, also few who are hypocritical enough to deny that they practice the art of healing not only as a means of livelihood but as an avenue to possible wealth. This is the more modern and accepted view, and being so, does it not behoove the profession to inquire whether it is strictly true to itself, for individual physicians to inquire whether they are true to their families and private trusts, when they engage in sanitation without fee or hope of reward? Has the public any right, either in law or morals, to expect any portion of it to sacrifice itself in the interests of the majority? Every means instituted by the physician to prevent disease means the cutting off to that extent of his income. Is there any other calling among men the members of which are expected to thus commit hari-kari?

We would not be misunderstood in this matter, nor would we for a moment have the means which are being put forth, either by organized societies or private individuals, abridged. We would rather have the facilities, national, state, municipal and private, increased until it would come to be a misdemeanor for a man to allow a member of his family to be attacked by a preventable disease; but we would also attach to the services rendered with such prevention in view, a proper remuneration. We believe it to be the highest conception of the physician's calling to prevent rather than to cure disease, but before the profession can afford to devote itself in this direction the public must be educated up to the rightfulness of recompensing the physician who dispenses an ounce of prevention equally with him who prescribes a pound of cure. Until that time arrives, however, the profession of medicine will yearly become a less remunerative calling, and the danger will arise of the better class of young men seeking other fields for their life work, leaving the comparatively profitless field of medicine to be delved either by inferior hands or by the extremely few who may enter it from pure regard to the weal of their kind. When we approach to the perfection in these matters which is said to obtain among the heathens of China, where the doctor is regularly paid during the health of his patron, his fees being stopped during sickness, we shall be able to better appreciate the sanitary measures which are now robbing us of our incomes.

The Oat (Avena Sativa) in Medicine.

THIS modest cereal has, for time out of mind, been familiar to both the human and the equine families as an article of diet. To the former it has lent its phosphates in building up bone and to the latter it has supplied not only bone and muscle, but also those "spirits" which are so indispensable to the first class steed. Horsemen are said to recognize two varieties of oats, the long and the short, the long being serviceable in temporary emergencies, but the short (avena sativa) supplying the underlying, essential principle so much admired in the noble animal.

Until recently the above were the only recognized virtues of the oat, but latterly an eastern savant has discovered in it a new property, in virtue of which the modest cereal has been graduated into the ranks of the materia medica, and, vested with its technical name, it is claimed to be a cure for the opium habit.

Having thus been introduced into the materia medica it behooves the medical profession to discover, if they may, in the physiological properties of the oat, the rationale of its alleged medicinal virtues. A physiological friend has undertaken the

task and has submitted the following report of his experiments to date:

Experiment 1. A kitten; female; variety, Maltese; weight, 3 lbs; had been weaned for a week, and was the pet of the family. Gave at 9 A. M., *per orem*, 10 minims tr. avena sativa. 9:30, kitten very lively and disposed to undue familiarity. 10, imbued with very equine instincts and made several very highly mettled circuits of the room, rearing repeatedly on its hinder extremities, due probably to an action of the avena sativa on the ganglionic system. 11, kitten turned out to pasture.

Experiment 2. Dog; male; variety, cur; weight, 20 lbs; age, 3 years; pedigree, uncertain. Injected one drachm tr. avena sativa subcutaneously at 3 P. M. Let it suffice without entering into monotonous detail that the effect on the canine nature was very similiar to that on the feline, it also being gradually transmogrified into the equine.

Experiment 3. Horse; male; color, bay; height, 14 hands; speed, 7 minutes, with running mate; diet had always been oats, with the addition of rawhide as a stimulant. Gave tr. av. sativ. ℥ xij in bran mash, at 10 A. M. Matched him at 3 P. M. for three heats in a race against noted flyers. Time 2.16. 2.15½, 2.14. Money raked in at the pools $4,210."

The above results, it need scarcely be said, are remarkable, and demonstrate the wonderful metamorphosis which dilute alcohol is capable of effecting in the oat. It should be stated, however, that the preparation employed was of eastern manufacture and from eastern oats, previous experiments with tincture made from western oats by western pharmacists having signally and demoralizingly failed to affect the natural instinct of the animal experimented on.

The deductions from the above are obvious:

1. Oats when given as a diet differ materially in their effects from the same grain when given as a medicine.

2. Contrary to all previous experience the alcoholic tincture of the grain assumes properties not discoverable in the grain *per se*.

3. The intellectuality of the eastern atmosphere imparts to oats grown in that section, a psychical and æsthetical influence which place avena sativa high up on the list of remedies.

For further light on this subject see article by Dr. H. H. Kane, on page 273, July No., Therapeutic Gazette.

The Tomato.

RECENT developments in connection with this common article of diet furnish a very apt illustration of a principle which obtains in the matter of the newer introductions to the materia medica, viz., that almost invariably the therapeutic properties are first discovered through the empirical employment of the drug. Familiarity is very prone to breed contempt in some minds for drugs as well as for persons, and when any claim is made of medicinal virtue for a substance which has been long known, it is very apt to be ridiculed by such. This was exemplified in the case of the tomato (lycopersicum esculentum), raised to the rank of medicaments for its effects in cancrum oris, nursing sore mouth, etc. Dr. T. K. Griffith, of Hollyrood, Kansas, somewhat accidentally discovered its efficacy as a remedy in such affections, and reported the fact through the columns of the Therapeutic Gazette, in the September, 1881, number. Certain knowing ones have affected to ridicule the claim thus made for this article, but without, as far as we have been able to learn, having ever put the claim to a test. Dr. Griffith ventured no theory to account for the action of the tomato; he merely reported the fact that numerous tests had satisfied him that the ripe fruit would cure the affections named. The only way to prove or disprove a claim of this nature is to try the remedy; ridicule will never do it.

We would ask attention in this connection to the selected article on "The Tomato" as it appears on page 356 of our present issue. It will there be seen that the empirical fact, as stated by Dr. Griffith, has a very substantial foundation in the chemical characteristics of the plant. Our attention was called to this article by the note from J. J. Mulheron, M. D., professor of materia medica and therapeutics in the Michigan College of Medicine, which we take the liberty of publishing under the head of correspondence in this number.

Threatened or Actual Epidemics.

CONGRESS has materially abridged the functions of the National Board of Health and has correspondingly cut off its appropriations. The work, which it has been doing so well, of initiating and executing measures for the prevention and suppression of epidemic is, as will appear from the following circular issued by Dr. John B. Hamilton, Supervising Surgeon-General U. S. Marine Hospital Service, to be hereafter under the centrol of this latter division of the civil service:

Washington, D. C., August 9, 1882.

"*To Medical Officers of the Marine Hospital Service and Officers of State and Municipal Boards of Health:*

I am directed by the Secretary of the Treasury to inform you that Congress, at its last session, enacted that—

"The President of the United States is hereby authorized, in case of a threatened or actual epidemic, to use a sum not exceeding one hundred thousand dollars, out of any money in the Treasury not otherwise appropriated, in aid of State and local boards, or otherwise in his discretion, in preventing and suppressing the spread of the same."

He further directs me to inform you that the President has decided to employ this contingent appropriation through the agency of the Treasury Department, and that, in case of a threatened or actual epidemic, immediate action will be taken, upon application from the Governor of a State addressed to the Secretary of the Treasury."

This order does not affect the status of the Immigrant Inspection service, which will be continued under the supervision of the National Board of Health, under the ruling of the Comptroller of the Treasury.

Quebracho in Dyspnœa.

THE use of this drug at the New York Hospital in a large number of cases demonstrates anew its remarkable value in dyspnœa. It has been employed in that institution in a large number of cases, and patients after experiencing the great relief its use affords, ask for it again. It is called by them "the breathing medicine." Dyspnœa from almost any cause seems to be benefitted by it. Further researches will probably demonstrate the rationale of its action.

Aspidosperma Quebracho is a tall tree with a perfectly straight trunk from two to three feet in thickness, with a moderately large oval crown and sparse foliage, the extreme twigs being very fine and pendant, as in the willow. The bark of the tree is employed in medicine. Quebracho belongs to the genus aspidosperma originated by Martino and Zuecarina. Natural order, apocyneæ. Attention was attracted to it principally by the comments of Schikendanz. It was investigated by Dr. F. Penzoldt to determine its therapeutic action, and by G. Fraude to ascertain its chemical composition. The investigations of the latter resulted in the discovery of an alkaloid which seems theoretically related to the cinchona alkaloids, while the former researches brought about a knowledge of the wonderful efficacy of the remedy in dyspnœa, though the praise awarded to it for its anti-febrile properties was not found justified. The unexpected action of quebracho bark at once elevated it to the rank of valuable remedies.

A "Working Bulletin" containing the results of these investigations, issued by the Scientific Department of Messrs. Parke, Davis & Co., will be forwarded gratuitously to members of the profession who desire it, by addressing the editors of the GAZETTE. This work contains a full history of the drug.

Though the therapeutic action of quebracho has been investigated by such able men as Penzoldt, much has yet to be learned. Each member of the profession owes a debt to medical literature. By using this drug and reporting his experience, be it favorable or otherwise, not only may part of this debt be paid, but each one by so doing will contribute his share to medical science. The columns of the GAZETTE are always open for such reports.

Menthol and Bromide of Ethyl in Neuralgia.

DR. F. E. Stewart recommends a mixture composed of equal parts by weight of menthol and bromide of ethyl, as an outward application for neuralgia, toothache, headache, in the treatment of which he has found it very useful. At his recommendation menthol has been used in Charity Hospital, Blackwell's Island, New York, and in a report from that institution, referring to it as a remedy for headache, we notice the expression, "It is a godsend." Menthol is not soluble in water. Alcohol, however, dissolves it. Bromide of ethyl is a perfect solvent for the drug, and possessing powerful anæsthetic properties, the combination is of double value. On evaporation of the ethyl bromide, which is very volatile, the menthol is left distributed over the spot in the form of an impalpable powder, which slowly evaporates, producing a most cooling, delightful sensation and tranquilizing effect.

The Druggist's Journal.

THE "Druggist's Journal," is the name of a new monthly publication of materia medica, chemistry, botany and microscopy, just issued for the first time in Philadelphia. Its editor is L. E. Sayre, Ph. G., well known as the author of a valuable work on "Organic Materia Medica," and its publishers George A. Frey & Co. It is a sixteen-page journal, printed in clear type, on good paper. The aim and object of the Druggist's Journal are best described in the well-written Salutatory on the first page of the number before us, which bears the date of August, 1882, No. 1.:

"It will be our constant aim to publish in each issue original articles bearing on the practical work of the laboratory, while we shall studiously endeavor to avoid those subjects designated as highly theoretical by the working pharmacist, and we will be equally on our guard against that host of impracticable, hackneyed, worthless, and ofttimes purely imaginary formulæ with which the pharmaceutical literature of the day is fairly flooded. We will encourage, to the extent of our power, original research in the laboratory, and in pursuance of this policy, no article bearing the imprint of honest labor, will receive our discouragement. We specially invite communications of this character from the students in our medical, dental and pharmaceutical schools.

"We propose to labor *ourselves* for, and hand in hand with the student, compounder, manufacturer, and dispenser. Wherever we find we can be of aid to either, we will be quick to seize the opportunity."

If pharmacy is to be a science it must have a literature. We, therefore, welcome this new journal to the fellowship of medical journalism. Its special field should receive more attention from the medical profession.

The Therapeutic Gazette for 1883.

THE season being nigh at hand when physicians consider the subject of subscriptions to periodicals for the ensuing year, the publisher of the THERAPEUTIC GAZETTE has had an extra edition of this issue of the journal struck off for distribution among non-subscribers. He respectfully solicits of such physicians as may receive a copy of this number, and are not subscribers, a critical

examination of the same with a view to their becoming subscribers.

The success of the GAZETTE in the matter of subscriptions has been unequalled by any medical journal in this country. Although but in its third volume, its subscription list number over 10,000 *bona fide* names. This phenomenal success has been achieved chiefly through the fact that the journal supplies a want not even attempted to be supplied by other medical journals, viz., a journal especially devoted to progress in therapeutics—the division of medicine in which all practitioners are chiefly interested. It aims, furthermore, to be a medium of consultation between the working members of the profession in different sections of the country, its large and wide-spread circulation making it peculiarly fitted to this end.

We would request those who may desire to become subscribers to fill out the blank on advertising page in this number and enclose with it the price of subscription ($1). This will entitle them to the remaining numbers of current volume free of charge.

WE have admitted Dr. Lenggenhager's review of Dr. Palmer's book on "Homœopathy,—What Is It?"* which we noticed some time since. We do so as we are willing that both sides may be heard.

We have no desire, personally, to discuss the merits of either side of the question and leave it for our readers to decide for themselves.

Abstracts.

The Cause of Sick Headache.

In the Medical and Surgical Reporter of July 29th, 1882, is an article on the foregoing subject by G. C. Savage, M. D., Jackson, Tenn., in which the author says that sick headache is due to hypermetropia and astigmatism, either alone or combined, and offers as a cure a properly fitted glass. The gist of the paper will be found in the following abstract:

"In the latter part of March, of the present year, the premonitory symptoms of an attack of sick headache warned me of the ordeal through which I must soon pass, unless something could be done to avert it. I did not take the accustomed dose of chloride of sodium, which always gave me as much relief as anything I had ever taken; but had three or four drops of a one per cent. solution of atropia put in my left eye, the one always hurting me throughout an attack, my headache and eyeache being confined to the left side. In half an hour my ciliary muscle was at rest, and I was perfectly free from pain and had no inclination to vomit, whereas, if the atropia had not been put in my eye, by the end of the same half-hour my headache would have been almost unbearable, and great nausea and vomiting would have attended, all to last and to make me most miserable for several hours. I was most happy with the change I had experienced, and felt like crying out "Eureka!" What gave me relief? The atropia had relieved the tension of the ciliary muscle, putting it at rest, and thus relieving its pain; and, there being no further cause for sympathy on the part of the head and stomach, the pain and nausea ceased. Although I had, apparently, perfect vision before the ciliary muscle was put at rest, I now found my vision equal to $\frac{20}{c}$, i. e., I could see at a distance of twenty feet only letters that, before the atropia was used, when the ciliary muscle had its full power, I could have read at a distance of one hundred feet, and even these large letters seemed double. Now the condition of my ciliary muscle under atropia is just the condition natural and essential to a perfect (emmetropic) eye, when looking at distant objects, and yet the vision of an emmetropic eye would be equal to $\frac{20}{xx}$. Both hypermetropia and astigmatism existed in my eye, already at rest, for which I gave the full and proper correction. The glass correcting the defect and enabling me to see without straining, as well as a perfect eye can see, is a combination of a convex spherical of forty-two inches focal distance and a convex cylindrical of sixty inches focal distance, with its axis set at an angle of 95°. I afterwards found my right eye both hypermetropic and astigmatic, and gave it the proper correction. Since March I have been doing all my reading and writing with my glasses, with the exception of one week, and for laying them aside for only that short time, I paid dearly in suffering from a severe attack of sick headache. The reason for laying them aside was two-fold, viz.: 1st. I was using the heavy glasses and still heavier frames of my refracting case, which, on account of their weight, were uncomfortable; and, 2d. I wanted to test their value by not using them. While wearing them I did not feel a single symptom of sick headache. When I put them off I continued reading as when using them, but with inconvenience I had never felt before. I suffered so from the attack of sick headache caused by the disuse of my glasses that I shall never repeat the folly in the future. I had a pair of spectacles made, and now wear them all the time, and feel that I am safe from attacks, relief from which I had expected nothing but age to give me.

In my own case sick headache had its cause in hypermetropia and astigmatism, and its cure was glasses.

I have had but one other case by which I have been able to still further demonstrate the correctness of my views. That case is a married lady, twenty-six years of age, a sister of mine. She was not so great a sufferer as my mother or myself, but her cure has been as perfect and as reliable as my own. She was hypermetropic in one eye, and both hypermetropic and astigmatic in the other eye. The proper glass for each eye was given her, and now her sick headache is a thing of the past.

Flint, in his work on practice, says that the affection involves a constitutional predisposition, acting with which various exciting causes may

*Homœopathy.—What is it? by A. B. Palmer, M. D., LL.D., Professor of Pathology and Practice of Medicine in the College of Medicine and Surgery in the University of Michigan. Second edition. An able exposition of the fallacies of the Homœopathic system. This book has received the highest commendations from the medical press. The second edition has been carefully revised. Cloth, price, $1.25.

bring on an attack. He could not name the predisposing cause. He supposed that some toxical agent must exist in the blood, but says its source and nature are unknown. I claim that the predisposing cause is hypermetropia and astigmatism, either alone or combined, and that chief among the exciting causes is work requiring the convergence of the axes of the eyes with the attending action of the ciliary muscle, such work as reading, writing, sewing, crocheting, etc,, which work in an emmetropic eye would produce no bad symptoms.

With Flint I agree that the predisposition, in most persons, ceases at the age of 50 or 60 years. While he gives no reason, to me there is a satisfactory reason, and it is the only one ever offered, so far as I know, it always having been considered an inexplicable fact. My explanation is that it is about the age of 50 or 60 years that, in most persons who are hypermetropic, whether they suffer from sick headache or not, when a latent hypermetropia is converted into a manifest hypermetropia, the ciliary muscle that has had to work so hard during so many years being worn out and ceasing its labors. Long before this has presbyopia (old sight) come on, requiring the person to use spectacles when doing near work, as reading, etc. By this time the hypermetropia is manifest, while during the period through which he suffered, perhaps 30 years or more, the hypermetropia was latent, rendered so by the action of the ciliary muscle.

The periodicity of the attacks may be explained by the eye being able to bear for a time the excessive work it is made to do, when at length its distress is made known by an explosive attack of sick headache, the eye and head aching indescribably, and the stomach, through sympathy, so nauseated as to unload itself of its contents. Even before the attack comes on the stomach performs its functions sluggishly, through sympathy for the overworked eye. Cannot the stomach sympathize with the eye if the eye and head can sympathize with the stomach?

Therapeutic Action of Chlorate of Potassium.

Dr. J. V. Shoemaker, of Philadelphia, to whom the profession are indebted for much original work in therapeutics, read a paper at the late meeting of the American Medical Association at St. Paul, Minn., on the "Therapeutic Action of Chlorate of Potassium," from which we abstract the following:

This powerful energetic, and active drug was discovered about the end of the last century (1786) by Berthollet, and was used for the first time by Fourcroy in 1796, with the idea that it might transmit some of its oxygen to the body. At its introduction this salt was principally recommended as an antidote to scurvy; Chaussier proposed it as a remedy in croup. It had completely fallen into oblivion, when Dr. Blanche, repeating the experiments made in 1847 by Hunt and West with this medicine in the treatment of gangrene of the mouth and pseudo-membranous stomatitis, was led to try it in the treatment of pseudo-membranous sore throat and croup. The Doctor added that he had met with marked and decided success from its internal use in scrofulous skin diseases; likewise Dr. M. Landesberg, of Philadelphia, had reported very gratifying results from its topical application in epithelioma of the eye-lids. He then passed to a consideration of its properties and tests, after which he spoke of its physiological action, and remarked that the value of this salt is said by some to be largely due to the great amount of oxygen which it contains, and therefore it is looked upon as the most potent agent in the treatment and cure of all maladies dependent on suboxidation or defective nutrition, secretion, excretion, aeration, and molecular metamorphosis.

Dr. Shoemaker then turned to the consideration of its therapeutics, showing its decided action on the system, and that it acts in some hitherto unexplained manner in abnormal conditions of the blood, changing its character, and overcoming morbid states. In speaking of its external application he said: The utility of this salt, as a gargle in the treatment and cure of mercurial salivation and ulcers of the mouth and throat, is universally attested. In the proportion of a drachm to a glassfull of water it is of service as a gargle in the various varieties of stomatitis, often quickly relieving the dry, red, and follicular congestion of the mucous membrane, and healing the ulceration when it exists. As a local application and gargle in inflammation and ulceration of the tongue, patiently and long continued, more particularly in the latter, it seems to do more good alone, at times in combination with astringents, than any other remedy. Used either as a gargle, or applied locally with a brush or atomizer, in simple catarrh of the anterior and posterior nares, and in simple and chronic catarrh of the larynx, it has been constantly used in many positive and curative ways.

He has used a solution of chlorate of potassium, one or two drachms to a half a pint of water, as a gargle in diphtheria and phthisis. In subacute and chronic stages of otorrhœa an injection of chlorate of potassium in the strength of five to ten grains to the ounce of water is often effective. In ozœna a douche of a solution of the chlorate of potassium in the proportion of one drachm of the salt to a pint of water will cleanse and thoroughly disinfect the parts.

As an injection also in leucorrhœa in the strength of one or two drachms to a quart of water it will often prove very useful by lessening the discharge and relieving all congestion of the parts should any exist. In gonorrhœa, used as an injection two or three times a day, in the proportion of five or ten grains to an ounce of water, it will very often produce an alterative impression upon the parts, and completely arrest the discharge. As an injection in chronic dysentery, in moderately strong solutions (dr. to oz.), its use has been recommended.

The chlorate of potassium will bring about a beneficial effect in chancroid applied either as a solution or dusted over the parts. Also in obstinate and chronic ulcerations, gangrenous sores and ulcers, discharging fetid secretion, either alone or dissolved in water. In pustular eczema, the use of a solution containing one or two drachms

to the pint of water, applied with old muslin, will very frequently lessen the discharge and heal the surface.

He then referred to its internal use, and said that the chlorate of potassium, as a remedy in croup and diphtheria, has been used with great advantage by many eminent and experienced practitioners, from the time that it was first successfully applied by Chaussier in 1819, then by Hunt, Blanche, Isambert, and Drysdale, and others, up to the present day. It should, in both these maladies, be given in decided doses, in from five to thirty grains three or four times daily.

He has secured marked benefits in phthisis. In marasmus, particularly in children, the use of small doses of this salt has a very satisfactory and beneficial influence. He has administered from one to three grains, three or four times daily, to weak and puny infants, who would regain their nutrition and fatten on its use in conjunction with good food. In anæmia it acts upon the relaxed mucous membrane of the digestive tract and so restores its functions.

In the eruptive fevers, such as scarlatina, morbilli, röthelin, and erysipelas, full and often-repeated doses will very often fill the surface with arterial blood and bring out an abundant crop of the eruption. In erysipelas it may arrest the poisoned state of the blood and diminish the tendency to suppuration in the parts. It has also been said by some observers to be of service in typhus and typhoid fevers. For diseases of the skin the chlorate of potassium, given in various doses according to the ability with which the patient bears the drug, is of the greatest value either in modifying or curing very many cutaneous affections. It is especially efficacious in ecthyma and in boils, carbuncles, sties, pustular acne, pustular eczema, and sycosis; it lessens the tendency in many to suppuration, and should this latter condition be established before administering the salt, it will be largely instrumental in overcoming the abnormal state of the system. Its effective action in carbuncles was very recently reported by Dr. Boardman Reed, of Atlantic City, at a meeting of the Philadelphia County Medical Society, September 22, 1880. Dr. Reed stated that the salt had been used upon Dr. Shoemaker's recommendation, who was in consultation with him. "The patient, a young girl, had two carbuncles, one on the back of her neck, and the other in front of the ear; they afterwards extended until the affected area was about five inches in extent. The patient was very weak. She became feverish, and the pulse was rapid and feeble, very little hope of her recovery was entertained until the chlorate of potassium was used in decided doses. Under good food with iron she rallied and became quite well."

He read his first observation upon the action of this drug in 1880, before the section of Practice of Medicine, in New York city, and since that time he has not only had continued good effect from this salt, but has also had, from many physicians, letters and short accounts of cases, commending the action of the drug and corroborating the results he reached. The doctor further showed the good effects produced by its use in scurvy, influenza, yellow fever, rheumatism, cyanosis, hemorrhagic diathesis, dropsy, syphilis, etc., and then gave the manner of its administration. He said: If the salt is given in small doses it will pass quickly and more readily into the circulation taken before meals, diluted with water. If, on the other hand, very large doses are administered, it will probably be better borne by the stomach after meals. The dose will vary according to the affection and the condition of the patient. He usually gives it in from one-half to thirty-grain doses every one two, or three hours, freely diluted with water. In the above doses it is well borne by the stomach, even in those who are very weak and enfeebled. He generally begins with a small dose and gradually increases it until the patient shows some sign of its effects, or he sees improvement in the disease. Those who are large, flabby, and apparently vigorous, will improve under smaller doses, as large amounts will sometimes serve to still more increase the quantity of fat on the body. On the other hand the pale, weak, and enfeebled will bear much larger doses, and will often increase very rapidly in weight.

On the Determination of Sex in Generation.

The question what determines sex in generation has often been asked but never satisfactorily answered. Dr. T. M. Harris, Medical and Surgical Reporter (Practitioner), calls attention to a theory, which though not a new one is no less interesting on that account. This theory is that the sexually determining force is in coition; that is, if the sexual desire of the male is greater at the time of coition than that of the female, the result will be a female offspring; and on the other hand, if the sexual desire of the female be the stronger, the result will be the conception of a male. The author states that his especial attention was called to the subject in certain observation made by him in the breeding of Jersey cattle. It is especially the case with this breed, that the females are of particular value, while the males possess little worth. On that account much dissatisfaction is expressed when a male calf is found when a female was hoped for. If, then, the above theory is correct the sex may be determined with a tolerable degree of certainty, at least in the animal creation; for we may keep a number of males in a fresh condition by proper care and feeding so that they shall always be warm, strong, and potent in the sexual act. Then, also, by keeping the female from the male until she shall have passed the meridian of sexual excitement, and her desire begins to abate, assurance may be made doubly sure. Dr. Harris says that though his observations have not been very extended their results are sufficiently important to justify him in the further pursuit of the subject.

In regard to the human race the author is of the opinion that the contingencies and vicissitudes of life, both physiological and marital, would naturally tend to the equilibrium of the sexes. But there are notable exceptions. Occasionally we find a family in which all the children are boys, and again in which all are girls, and in both cases running through the usual number of children for

a family. Now if the theory is correct we should find that the family of boys should have a mother of strong sexual properties, while the father should be lymphatic and sluggish. Of course the health of the parents must be taken into consideration. And so in the family where the children are all girls the opposite condition should obtain with regard to the parents. Dr. Harris' observations are tended to confirm the above theory especially in the case of men decidedly past the meridian of life, and whose physical vigor is on the decline marrying young, or comparatively young and vigorous women, the children from such marriages being almost uniformly boys. The case of illegitimate children might also be observed in its bearings on this subject, as the male, in this case, is usually the agressor.

Yerba Reuma in Gonorrhœa.

The Chicago Medical Review mentions the use of yerba reuma in the treatment of gonorrhœa. After the subsidence of the acute stage, free injections of two ounces of the fluid extract to a pint of water are employed, and, it is said, with advantage. As this plant seems to furnish good results in all catarrhal discharges from mucous surfaces, it is not surprising to hear favorable results of its use in this connection. The plant contains an unusual quantity of sodium chloride, but this can have but slight influence in producing the therapeutic effect claimed for the drug.

Book Reviews and Notices.

The Student's Manual of Histology, for the use of Students, Practitioners and Microscopists. Second Edition. By Chas. H. Stowell, M. D., Assistant Professor of Histology and Microscopy, and the Instructor in the Histological Laboratory of the University of Michigan. Illustrated by one hundred and ninety-two engravings. Detroit: Geo. S. Davis, publisher, 1882.

Less than a year has passed since the first edition of this valuable work was published. The demand for it has been so extensive as to require a second edition. This the author and publisher has furnished, and is now before us for notice. The time elapsing between the issue of the first and this second edition has been so short that no radical change has been deemed necessary. However, some slight inaccuracies have been corrected, and the proof carefully revised. The study of the red corpuscles of the blood, and the fibrillated structure of cells is receiving the author's attention.

The work is a valuable aid to the student of histology, and as such we take pleasure in commending it. It is handsomely issued by the publisher.

A Treatise on the Physiological and Therapeutic Action of the Sulphate of Quinine. By Otis Frederick Manson, M. D., Professor of Physiology and Pathology in the Medical College of Virginia. Philadelphia: J. B. Lippincott & Co., 1882. Detroit: J. McFarlane. Price, $1.

This is a small octavo volume of 164 pages, in which the author has collated all the special facts connected with this valuable drug. To the older practitioner, who has kept himself posted in journal literature and the writings of the older authors, there will be little of information to him; but to the younger members of the profession and the student it will be both of value and interest, as in it they will find, as it were, in a nutshell, that knowledge which it would require much time and patience to obtain elsewhere. To such we cordially recommend it.

The Change of Life in Health and Disease. A Clinical Treatise on the Diseases of the Ganglionic Nervous System Incidental to Women at the Decline of Life. By Jno. Tilt, M. D., Past President of the Obstetrical Society, of London, Eng. Philadelphia: P. Blakiston, Son & Co., 1012 Walnut st. 1882. Fourth edition. Paper, 75 cents. Cloth, $1.25.

"This is a clinical history of ganglionic diseases, carefully studied in their rise, progress, and subsidence at the successive critical periods of the life of woman."

We quote the above from the preface as the briefest method of informing our readers of the nature of the book. It is written in twelve chapters:

I. Introductory.

PART I—PHYSIOLOGY OF THE CHANGE OF LIFE.

PART II—GENERAL PATHOLOGY OF THE CHANGE OF LIFE.

Chapter 3—Principles of Pathology of Change of Life.

Chapter 4—Principles of Treatment.

Chapter 5—Principles of Hygiene.

PART III—SPECIAL PATHOLOGY.

Chapter 6—Diseases of the Ganglionic Nervous System.

Chapter 7—Diseases of the Brain.

Chapter 8—Neuralgic Affections.

Chapter 9—Diseases of the Reproductive Organs.

Chapter 10—Diseases of the Gastro-Intestinal Organs.

Chapter 11—Diseases of the Skin.

Chapter 12—Other Diseases.

To illustrate, a list of sixty-three cases is given; also a list of thirty-five tables, the whole concluded with a copious index.

The reputation of the author as an investigator and close observer in matters pertaining to women stamps this monograph as one of more than ordinary merit, which with its conciseness and the great interest it bears to the physician and also to the woman and her immediate relations, should place it in the library of every doctor to be read. The tables introduced give it additional value, and as the latest and most concise work on the subject, we cordially commend it to the profession.

The Multum in Parvo Reference and Dose Book. By C. Henri Leonard, M. A., M. D., Professor of the Medical and Surgical Diseases of Women and Clinical Gynæcology, Michigan College of Medicine. Thirty-fourth thousand. Price in cloth, 75 cents. Detroit.

A popular edition of this well known dose book has been issued in paper cover, price 30 cents, which makes it so cheap that every physician and student can well afford to be the owner of a copy. It is well worth the money.

The Popular Science Monthly, conducted by G. L. and A. J. Youmans and published by D. Appleton & Co., Nos. 1, 3 and 5 Bond street, New York, for September, is on our table. Its contents present to the reader a choice list of articles, either scientific in themselves or closely allied to science. Article 7, "The Physician of the Future," by Prof.

George H. Perkins. This is an address delivered at the opening of the twenty-ninth annual course of lectures in the Medical Department of the University of Vermont, and is of more than ordinary interest to the medical profession. The physician of the future, in the estimation of Prof. Perkins, is the man who will devote his energies in the prevention of distance—in other words, the dissemination of sanitary knowledge, and although "it may be too late to do very much for this generation, but may there not be a hope ror the next, and the next after that?" Evidently the writer has not posted himself in the amount of sanitation already given the public by the medical profession of this generation, or else he designedly underrates what has been already accomplished. Indeed the question has been asked, "Have we not now too much sanitation?"

The professor fears that unless the physician at once accepts the golden future of sanitation it will be inevitably lost to him to whom by right it belongs, and if he does not, it must slip from him and be seized by others who are non-medical. We can see no objection to their so doing. For years, with other members of the medical profession in our own city, has our time, our knowledge and experience been given for the benefit of our fellow citizens in the investigation of causes of disease and the best methods for removing and preventing them. Boards of health have been organized, under statute provisions, that they shall consist of physicians who shall serve without fee or reward, while the health officer, the clerks and the janitor shall be fully recompensed for their time and labor. Why not have the clergyman, the lawyer, the merchant, or any other intelligent citizen attend to such duties free as well the physician? Should the advice and knowledge of a physician be required, he should be liberally rewarded for it. We see no objection to laymen engaging in sanitary matters. We opine that sanitation should become a specialty in medicine and be paid for as in any other branch of business.

We fully agree with the professor that "it is a noble thing to give time and strength to the discovery of means which may be used to heal disease or alleviate pain," as in so doing the physician has his reward! But it is a question how far it is his duty to teach the public how to live, so that disease and pain may not come upon them, without a reward for his time, his skill and his labor. Could the order be changed that the physician should be paid for keeping his patrons well sanitary science would receive an extra impulse. But so long as the physician is only known to remove disease he cannot be expected to shut off the water and at the same time have the mill grind the corn. We are fully in accord with advancing sanitation; at the same time we believe that the sanitarian, be he physician or layman, should be well paid for his knowledge and advice.

Revision of Gross' Surgery.

We are pleased to hear of the completion of a revision of this valuable work. It is now in press and will soon be issued. Surgery is a progressive science and much has been discovered in this department of knowledge during the past decade. This new edition will undoubtedly fully represent all that is of value in the new discoveries in surgical science. Dr. Gross brings to his work great ability and experience; he is still full of vigor and we, therefore, expect that this new edition will be characterized by the same freshness of style so well known to the many readers of the old. Now is the time for those who possess a copy of Gross' Surgery to discard the old edition for the new.

A New Edition of the United States Dispensatory.

A new and revised edition of the United States Dispensatory (Wood & Bache) is now going through press. This work has long been known as a standard authority on the subjects of materia medica, pharmacy, chemistry, therapeutics, toxicology and allied branches of medical science, and is not only a valuable commentary on the pharmacopœias of the United States and Great Britain, but encyclopædic in its character, concerning the subjects of which it treats, many not being noticed in any pharmacopœia.

The new edition is being most carefully revised by Horatio C. Wood, M. D., professor of materia medica and therapeutics, in the University of Pennsylvania, Joseph P. Remington, Ph. G., professor of theory and practice in the Philadelphia College of Pharmacy, and vice chairman of the committee of revision and publication of the United States Pharmacopœia, and Samuel P. Sadtler, F. C. S., Ph. D., professor of chemistry in the Philadelphia College of Pharmacy and University of Pennsylvania.

We are informed that many of the articles have been entirely rewritten, and many new ones added, and that every effort has been made to make the fifteenth edition the most complete and valuable yet issued. Messrs. J. B. Lippincott & Co. are publishing the work.

Addresses, Reports and College Announcements.

Annual Address by the President of the Medical Society of the State of West Virginia. 1882. Fifteenth annual session. Instituted April 10, 1867.

This is such an address as we would expect from an intellectual gentleman to a body of men as intelligent as those of the medical profession of West Virginia. It is first-class in all respects, and the author would be only too pleased to send a copy to any one who should desire it. Address Dr. Reeves, Wheeling, Va.

Thirty-Ninth Annual Report of the Managers of the State Lunatic Asylum, Utica, N. Y., for the year 1881. Transmitted to the Legislature Jan. 13, 1882.

Fourteenth Annual Report of the President of the Inebriates' Home, Fort Hamilton, N. Y., for the year 1881. Also, a statistical report of 600 cases of alcoholic inebriates treated at the Inebriates' Home, from Nov. 1, 1879, to Jan 1, 1881. By Louis D. Mason, M. D., Consulting Physician to the Inebriates' Home.

Mount Elliott Cemetery, Detroit. By-Laws Rules and Regulations. The State Law. Financial statements and mortuary results. 1865-1881.

The Catholic Cemeteries of Detroit. 1804-82.

The Genius of Medicine. Annual address presented to the Florida State Medical Association, 1882. By Rob't B. S. Hargis, M. D., Pensacola, Florida.

Address Delivered by the President of the American Institute of Homœopathy, William L. Breyfogle, M. D., at its 34th annual session, held at Indianapolis, Ind., June 13 to 17, 1882. Printed by order of the Institute. Stevenson & Foster, 151 Wood street, Pittsburg, Pa.

Transactions of the Medical Society of the State of West Virginia. 1881. Fourteenth and 15th annual sessions. 1882. Instituted April 10, 1867. Dr. J. E. Reeves, President. Dr. S. L. Jepson, Wheeling, secretary.

The annual meeting of this young and growing society was held May 24 and 25, of the current year, and its transactions are before its members. Such promptness is commendatory, and some of the older societies might read a lesson thereon. Since its organization the medical profession have taken great interest in their State society, and their transactions show they are alive and prospering. Our best wishes attend them.

Double Irrigation and Drainage Tubes.—Uterine Dilatation by Elastic Force. The Cure of Hernia by the Antiseptic use of Animal Ligature. By Henry O. Marcy, A. M., M. D., Boston, Mass., U. S. A., Member of the International Medical Congress, of the British Medical Association, American Medical Society, Massachusetts Medical Society, Corresponding Member of the Medico-Chirurgical Society of Bologna, Italy, etc., etc. Reprint from the Transactions of the International Medical Congress, for 1881.

London: J. W. Kolckman, 2 Langham Place, 1881.

A Study of the Rupture of the Bladder, with some Experiments bearing upon the Closure of the Vesical Wounds. By Alexander M. Stein, M. D., of New York, Surgeon to Charity Hospital (Genito-urinary and Venereal Diseases) Professor of Visceral Anatomy and Physiology at the New York College of Dentistry and of Comparative Physiology in the American Veterinary College, etc. Reprint from the Annals of Anatomy and Surgery, July and August, 1882.

Bronchotomy and its After Treatment. By John W. Trader, Ph. D., Sedalia, Mo. Reprint from the St. Louis Medical and Surgical Journal, Feb., 1882.

A Reply to Dr. Foster Pratt's Paper on the "Legal Responsibility of Surgeons for ununited fracture," read before the Michigan State Medical Society at its Annual Meeting in May, 1882. By Donald Maclean, M. D., Professor of Surgery, University of Michigan. Reprint from July No. 1882, Physician and Surgeon, Ann Arbor, Mich.

Statements of the Relations of Dr. D. A. Joy to M. V. Wagner, in the Manufacture and Sale of Electrical Devices, made to the Board of Regents of the University of Michigan, Tuesday, May 2, 1882. By Geo. E. Frothingham, M. D.

Hot Springs of Arkansas and their Therapeutical Indications. By J. T. Jelks, M. D., Hot Springs, Ark. Member of the State Medical Society and of the American Medical Association.

A Treatise on Milk and Henri Nestle's Milk Food. For the earliest period of infancy and its later years. By H. Lebert, medical privy counsellor and professor.

The Practice of Gynecology in Ancient Times. By Edward W. Jenks, M. D., LL. D., Chicago, Ill. Reprint from Vol. VI. Gynecological Transactions for 1882.

Gonorrhœal Ophthalmia, Its Complications and Results; Iridectomy for Artificial Pupil. A Clinical Lecture at Michigan College Hospital. By C. J. Lundy, M. D., Professor of Diseases of the Eye, Ear and Throat. Reprint from Michigan Medical News, Feb. 25th, 1882.

Hygiene in Relation to the Eye. By C. J. Lundy, M. D., Professor of Diseases of the Eye, Ear and Throat in the Michigan College of Medicine, Detroit, Mich. A paper read before the State Sanitary Convention held at Ann Arbor, Feb. 28th, 1882.

The Female Perineum. By T. G. Comstock, M. D., Master in Obstetrics of the University of Vienna, St. Louis. Reprint from the St. Louis Clinical Review.

The Illustrated Quarterly of Medicine and Surgery. Edited by George Henry Fox, M. D., and Fred. E. Sturgis, M. D. No. 3, for July, 1882. A very rich and valuable number and fully maintains the opinion we expressed of it in its first issue. Send your subscription to E. B. Treat, No. 757 Broadway, New York. Price $8.00 per annum. Quarterly, $2.00, in advance.

Report of the Eye and Ear Department of St. Mary's Hospital and St. Mary's Free Eye and Ear Infirmary, Detroit, Mich. Antoine, Clinton, and Mullet streets. Open daily, Sundays excepted, from 11 to 12:30. For two years, ending June 1, 1882, Dr. Eugene Smith, Surgeon in charge.

Ingersoll Unmasked. A scathing and fearless exposé of his real life and real character. By Clark Braden. (Copyright secured.) Published by Clark Braden, No. 315 East Sixty-fifth street, New York. Price 10 cents.

Forty-second Annual Announcement and Catalogue of the Missouri Medical College, St. Louis, Missouri. Begins Monday, October 2nd, 1882, and continues for five months.

Forty-Sixth Annual Announcement Medical Department of the University of Louisville. Session begins October 2d and continues till March 1st, 1883.

Second Annual Announcement of the Collegiate Department of the Minnesota College Hospital, Minneapolis, Minn. Begins October 2d, 1882, and lasts five months.

First Annual Announcement of the College of Physicians and Surgeons of Chicago. Corner Harrison and Honore streets, Chicago. Session begins September 26th and continues 24 weeks.

Medico-Chirurgical College of Philadelphia. Southwest corner Broad and Market streets. Session of 1882-83. Session begins October 2d and lasts six months.

Class Work of the Pupils of the Illinois Asylum for Feeble-minded Children, for the school year ending January 30th, 1882, together with the commencement exercises held in the Chapel of the Asylum, January 22d, 1882.

College of Music, Cincinnati. Five terms a year. First fall term begins September 20th and ends November 27th. Terms of eight weeks' duration. Charges reasonable.

Therapeutic Progress.

RECTAL ALIMENTATION. — It seems somewhat strange, considering the frequency of those cases in which no food can be retained by the stomach, that more attention has not been paid to the introduction of aliment by the rectum. To show how little this method of feeding is valued, I quote the following paragraph from Wood's well-known treatise on *Therapeutics* (second edition): "The solvent influence of the rectal juices is practically nothing, and formerly the attempt was made to supplement this complete lack of power by the use of soups. It is evident that very little nutriment can be introduced into the system by such a plan; and, consequently, feeding by the rectum has hitherto been a forlorn hope, and has accomplished little good." Here, I take it, the author is speaking of unpeptonised injections of food; but, even if this be so, cases are far too numerous, in which patients have been kept alive by ordinary beef-tea enemata, to allow such a sweeping assertion as the above to pass unchallenged. As one example of good resulting from rectal feeding, the following case is instructive: A. B., aged thirty years, had sickness, which commenced soon after she became pregnant the first time; for eleven weeks, she was fed by beef-tea enemata, a wineglassful being injected every three hours. Nothing was retained by the stomach during the whole time. Subcutaneous injections of morphia were given continuously to allay the constant retchings. At the end of eleven weeks' stomach fasting, premature labor was brought on, because of the serious condition of the patient; upon this, the vomiting ceased.

It must be admitted that many practitioners, even now, so disbelieve in rectal feeding as rarely, or never, to adopt it; but I trust, with the valuable digestives which we at present possess, that the above mode of feeding will be increasingly had recourse to—not only in those cases where it is used simply to prevent starvation, but as a method of relief, or even cure, in many affections of the stomach and bowels.

In dealing with this subject, there are two things which, I think, are often overlooked, and yet have materially to do with it. The first is the length of time a patient is able to live without food; and

the second, the slowness or even absence of wasting which occurs in many cases of chronic vomiting. As regards the first, it has commonly been said that, after a fast of from eight to ten days, a person dies. This statement is doubtless true in some cases; but I am convinced, with our modern experience, that in many others it is not. What the exact period is it is impossible to say; it depends upon many circumstances. A certain condition of the nervous system seems to be essential to enable the body to endure a lengthened starvation; and, when we consider that this condition is almost invariably associated with rest in bed to all the locomotor organs, with little or no brain-work carried on, and the temperature maintained to a great extent by the bedclothes, it is scarcely conceivable how little nourishment is needed to keep body and soul together. As regards the second point—the little wasting which goes on in many cases of chronic vomiting—it is explained either by the food not being rejected *in toto*, or by a portion of the food being absorbed before vomiting comes on.

I may also mention, in passing, that the mouth itself is capable of a certain amount of absorption; and, though this mode of food administration is not frequently adopted, it must not altogether be forgotten. But, even after the above have been fairly considered, there is still sufficient evidence to show unequivocally the life-retaining property of the rectum.

Dr. Bowles informs me of a case of gastric ulcer, under the care of Dr. Hermann Weber, at the German Hospital, which was fed for one month on Darby's peptonised fluid-meat only *per rectum;* at the end of one month, the patient had gained one pound in weight.

Before going on to speak of the cases which require rectal feeding, the preparations of food which have been and those which are used at present, it will be well to say something about the anatomy of the rectum, the theory of absorption, as well as the best mode of administering an enema.

1. *Anatomically*, the rectum is not ill suited for the purpose of feeding. It is extremely well supplied with blood-vessels, which have a most free anastomosis; in fact, its mucous membrane is thicker and more vascular than that of any other part of the large intestine. Lymphatics of a large size are found here; and Mr. Wadham, late physiological assistant at St. George's Hospital, tells me that he has found several small solitary glands in this part of the bowel. Towards the anus, the secretory apparatus gradually disappears. At the lower part of the rectum about an inch from the anus, there is a dilatation of the bowel—this dilatation being of considerable use for the lodgment of food; and, lastly, the anus itself, although it fails in its duty in some cases, yet in very many others acts effectually as a sphincter, much in the same way as the sphincter at the cardiac or the pyloric end of the stomach.

2. With respect to *absorption*, it has been said that substances known as colloids, such as albumen, gelatin, starch, etc., cannot pass into the system until they are converted into crystalloids; and, as this change has been supposed not to take place in the rectum, the giving of enemata containing colloids, such as beef-tea, eggs, etc., has little or no nourishing effect upon the body; and the brandy, which is frequently added, only tends more to increase the colloid properties of the aforementioned foods and therefore to render still more nugatory the use of these enemata. Graham supposes the coats of the stomach to dialyse the food during digestion, absorbing the crystalloids and rejecting the colloids—an action favored by the thick coating of mucus which generally lines the stomach; but Miller, after having quoted the above paragraph, goes on to say that "this suggestion probably requires some limitation—otherwise starch, gelatine, and other colloids, unless previously converted into crystalloids, would be wholly unabsorbed after they had been swallowed." The starch, as far as the stomach is concerned, is converted into a crystalloid by the saliva; and the starch which escapes being made dialysable in the mouth is made so in the duodenum by the action of the pancreatic juice. This is the reason, probably, why sugar has been recommended to be added to nutrient enemata. Whether the rectum has the power of changing colloids into crystalloids, is perhaps doubtful; but results which have and do now follow the use of alimentation by the bowel, are too evident to leave any doubt that the rectum possesses properties by which nutrient injections, if not wholly absorbed, are certainly partially so.

It has been suggested that the secreted intestinal juices which descend from above may dissolve a considerable amount of starch and animal fibre; and lately a theory has been put forward, that the contents of an enema are carried from the rectum to the upper intestinal tract, where digestion and absorption actively takes place; but, as digested meals can now be given to the rectum to a great extent, there will be little need for the rectum, as well as perhaps other portions of the bowel, to act the part of a stomach.

3. *The operation of administering an enema* requires to be carefully and skilfully done. Anyone who has given these injections by means of the ordinary ball syringe, must have felt the inconvenience of this, the usual mode of procedure. If the ball be not quite full, air will probably be injected into the rectum, to the annoyance of the patient; and, even when the ball is full, great care must be exercised not to spill any of its contents on the bed. The best mode is to take a piece of India-rubber tubing, two or three feet long. At one extremity fix a small piece of bone, resembling that which is attached to an ordinary Higginson's syringe; to the other end of the tubing attach a funnel. When the injection is to be used, the patient is placed on his side, the bone extremity of the apparatus oiled, and placed in the bowel, the other end raised, and the prepared enema is now poured into the funnel, and runs easily and comfortably into the rectum; the rate of progress can be increased or diminished according as the funnel is raised or lowered, or the food can be arrested at any time altogether by just nipping the tube below the funnel by the fingers of the hand holding it.* If this apparatus be not at hand, a Higginson's syringe is the next best thing. I need hardly say that the rectum should be empty when a nutrient injection is to be given.

4. *In what cases should recourse be had to rectal feeding?* I would recommend it in all cases where obstinate and constant vomiting has existed for four days, or even before; of course, if the cause be a removable one, this should be attended to at once. Then there are a large number of cases in which rectal alimentation might be used beneficially as a means of treatment or even cure; such as painful diseases of the stomach, including gastric ulcer, cancer, dilatation, or, again, in some affections of the bowel.

5. *Composition of Nutrient Enemata.*—Hot water can scarcely be regarded as a food; yet, in some cases of collapse, the injection of it, about the temperature of the blood, might very reasonably be given. In many conditions of partial stoppage of the circulation, an addition to the volume of the blood has been successful, at least temporarily, in re-establishing the action of the heart.

Nutrient enemata have been in the past, and are often now, made with beef-tea, milk, the yolk of an egg, and a little brandy, either separately or combined; in bulk not exceeding three ounces, and given every two, four, or six hours, according to

*To prevent air from entering the rectum, the tubing can be "clipped," either by a spring or the fingers, close to the bone extremity, whilst the food is being poured into the funnel.

the exigencies of the case. Although the above have done good, their value has been enhanced since the introduction of artificial digestives. Pepsine, in its various forms, and hydrochloric acid, were long used in stomach digestion, before their value was recognised in rectal alimentation. Pepsine is now very much replaced by the preparations of pancreatine, the latter possessing the double power of acting on proteids as well as on starch. The two ferments which have the property of changing the proteids into peptones, and the starch into sugar, are called respectively proteolytic and diastatic; and, on account of this double property of pancreas, the preparations of the latter have come very much into vogue.

Two preparations of pancreas for rectal use have been made—one by Dr. Leube, and the other by Dr. Horace Dobell. In the former, one part of finely minced pancreas is mixed with three parts of scraped meat, adding warm water sufficient to make a small injection, and sometimes a slight proportion of fat. Dr. Leube found, by experiments on dogs, that a considerable amount of nitrogen was thus consumed by the body. In the second preparation, a fourth of a pound of cooked beef or mutton is finely grated, to which are added twenty grains of pancreatic powder, and twenty grains of pepsine (pig's); the whole is mixed in a warm mortar quickly, and one tablespoonful of brandy, and enough warm water to bring the mixture to the consistency of treacle, are added, this is injected as quickly as possible after the mixture has been made.

I think that the best pancreatic preparation, and certainly the one most easily tried, is that known as liquor pancreaticus (Benger), strongly recommended by Dr. W. Roberts, of Manchester, in his Lumleian Lectures of 1880, "On the Digestive Ferments and the Preparations and Use of Artificially Digested Food." Speaking of the giving of food by the rectum, Dr. Roberts says: "The enema may be prepared in the usual way, with milk-gruel and beef-tea, and a dessertspoonful of liquor pancreaticus should be added just before administration. In the warm temperature of the bowel, the ferments find a favorable medium for their action on the nutritive materials with which they are mixed, and there is no acid secretion to interfere with the completion of the digestive process." Thus, in one thing the rectum possesses an advantage in the use of this preparation over the stomach, in the absence of any acid to interfere with the full action of the pancreatic ferments. In giving these enemata, they should be made of milk, or milk with beef-tea, or of milk-gruel. To a half a pint of the warm enema, a tablespoonful of liquor pancreaticus and half a teaspoonful of bicarbonate of soda should be added. About three ounces of this mixture should be injected every two, four, or six hours, as the case requires.

In a communication to the *British Medical Journal* of February 19th, 1881, a nutrient suppository is recommended by Mr. Spencer, of York, in cases where the nutrient enema would otherwise be used. The suppository is about the size and shape of the old-fashion bullets; it is made of peptonised beef. Mr. Spencer speaks well of its use; but I think some more experience is necessary to test its comparative value. Its obvious gain is the ease with which it can be introduced into the bowel, causing no trouble to either patient or nurse; but a drawback is likely to arise from the solidity of the preparation, the rectum being supposed not to take up food readily in this way. I have used the suppository in one case, and recommended it in another; in the latter, I believe, with fair results. It would seem that the cacao-butter with which Mr. Slinger (the chemist who made them at the suggestion of Mr. Spencer) covered the suppositories, is rather detrimental than beneficial, as opposing somewhat the liquefaction of the meat. Mr. Martindale, of New Cavendish street, London, made some for me, simply oiling the exterior, and adding to each suppository a fourth of a grain of acetate of morphia; in this form, I found them better retained, and apparently more quickly dissolved. Lastly, enemata of blood have been recommended, and in some cases successfully tried. They were first suggested by Dr. Andrew H. Smith, of New York; he found that, when blood was administered *per rectum*, both corpuscles and serum were absorbed. Three or four ounces of defibrinated blood having been injected into the rectum at night, no trace was found in the evacuations the next morning. Ox's blood has generally been employed. It must be fresh and defibrinated before use, and two or three ounces may be injected every two or three hours; but, if there be any stomach-digestion going on, it may be less frequently used. In order that there may be no delay in its use, it can be obtained already prepared, concentrated and preserved in tins. To prepare the injection, the concentrated blood is dropped into the warm fluid to make the enema, a fluid drachm representing a fluid ounce of ordinary blood. The cases so treated have been recorded by Dr. Smith, Dr. Hanks, and Dr. F. W. Brown in America, and Dr. A. Ernest Sansom in this country; they have been those of gastric ulcer, severe uterine hæmorrhage, diphtheritic paralysis in a child, pulmonary phthisis, anæmia, and a few others. The success so far attending this novel mode of treatment is certainly sufficient to encourage an extended trial.

In this paper, I have purposely avoided the subject of using the rectum medicinally; yet, surely, the bowel might be more profitably used in this way than at present. We know the great value of administering morphia by the bowel; and there is every reason to believe that other medicines, used in suitable cases, would have an equally good effect.—W. Joseph Tyson, M. D., in *The British Medical Journal.*

Lutidine as an Antidote for Strychnia.—Messrs. Greville Williams and Waters have discovered an antidote for strychnia in the organic base first prepared by the former, by distilling cinchona with caustic potash, and to which he assigned the name *beta* lutidine. Having ascertained, by experiments upon frogs, that *beta* lutidine causes a distinct increase in the tonicity of both cardiac and voluntary muscular tissues; also retardation of the heart's beat; that it arrests the inhibitory power of the vagus; and that, by its action upon the nerve-cells of the spinal cord, it, in the first place lengthens the time of reflex action, and then arrests that function; they proceeded to test its direct counter action to strychnia. The brains of frogs were destroyed in the usual way. An animal was then treated with *beta* lutidine till reflex action disappeared; when the subsequent administration of strychnia was not followed by the usual results. To another frog, strychnia was given till strychnia tetanus was produced, when it was found that the subsequent administration of lutidine caused the tetanus to pass off. The almost simultaneous administration of the two bases was not followed by tetanus. The results of these experiments are most promising, and it is to be hoped that the fanaticism of the antivivisecting portion of the community will not be influential to prevent the use of *beta* lutidine in practical toxicology. We hope to hear that the base has been used for experiments on animals poisoned by strychnia and whose brains have not been destroyed.—*Brit. Med. Jour.—Am. Med. Weekly.*

EXTRACTS OF MALT.—For a physiological valuation of the extracts of malt of the present day, we must inquire (1) what is the comparative value of malted grain, and (2) to what extent are the constituents of malted grain obtained and preserved in the manufactured extracts? We have to ask, not only of digestible food substances, their quality and quantity, but of agents to carry on digestion, their presence and power.

Malt as a whole has never been generally adopted as a food. It has been proposed as an addition to grain for the feeding of animals, and Mr. Lawes, a life-long worker in the chemistry of the cereals, instituted a series of experiments, finding that by feeding a given quantity of unmalted grain, more increase of weight of animals would result than could be obtained by feeding the equivalent but smaller quantity of malt. Ground barley malt has been used by man as a special food, in scurvy, and in some forms of indigestion, and it has been introduced into some of the proprietary farinaceous foods for children and invalids. When used by physicians, however, a hot infusion or a decoction has more often been directed, so that only the soluble part of the malt has been taken. And now, for ten to fifteen years past, numerous extracts of the soluble portion of malt have been extensively made and carried into use over the world.

In malting, grain only loses about one-tenth of its weight, beside a loss of water in the final drying. With a limited extent of oxidation, which causes this small loss of solids, there occurs an extensive saccharous transformation of the starch, and no small modification of the albuminoids. Lawes reported as follows:

	IN BARLEY.	IN MALT.
Sugar	2.56	11.01
Starch, Dextrine and Fat	80.42	72.03
Albuminoids	9.83	9.95
Fiber (celulose)	4.69	4.84
Ash	2.50	2.17
Water	17.64	6.66

Of both sugar and dextrine there is in malting an average increase of over twenty per cent., with a nearly equivalent diminution of the starch. The albuminoids are diminished a little in absolute quantity, and changed very much in character. O. Sullivan states that malt yields at the most only about thirty per cent. to cold water. It is commonly stated that it should yield, by hot digestion, about two-thirds its weight. Hager says that one hundred parts of malt should give seventy to eighty parts of syrupy extract, which would contain from fifty-two to sixty parts of solids. In May and June, 1880, an analysis of four of the extracts of malt in use was made,* under my observation, with the following percentages of the two chief non-nitrogenous constituents, and the ash:

	NUMBER 1.	NUMBER 2.	NUMBER 3.	NUMBER 4.
Malt Sugar	46.53	30.49	16.87	38.47
Dextrine	11.49	4.67	4.81	10.87
Ash	1.67	1.34	1.89	1.68

Number 3 was a fluid preparation, the other three were syrupy. Dunstan and Dimmock, in analysis of extracts of malt current in England in 1879, found (as extreme limits among five samples) from forty-one to fifty-three per cent. of maltose, from five to nine per cent. of dextrine, from four to six per cent. of albuminoids, from 1.1 per cent. to 1.6 per cent. of ash, and from twenty to thirty-two per cent. of water.

This sugar, formed from starch at the seat of germination, was for a long time accepted as identical with the sugar from starch by boiling with mineral acids, but the research of O. Sullivan in 1872, established decided differences. Maltose (malt sugar) is more nearly allied to cane sugar that it is to glucose. Beside distinct optical powers, maltose possesses only sixty-five per cent. as much deoxidizing power with Fehling's solution as glucose. Starch is converted not wholly into sugar, but into variable proportions of malt sugar and dextrine, as co-ordinate products, the dextrine being mostly and under ordinary conditions wholly a final product of the saccharous fermentation, though capable of being changed into glucose.

Now it remains to be established whether or not there are any important differences, in the point of physiological adaptation as foods between (1) the sugar of our own starch-digestion, (2) the sugar of malt, and (3) the sugar of starch conversion by mineral acids. From the analogy between the action of the pancreatic ferments and the diastase ferments, we must look with favor upon the product of the latter as an article of food, and therefore choose food-sugar from malt extract, rather than from the glucose factory, aside from the serious question of contamination at the last named source. As for dextrine, and the soluble forms of starch found with it in malt, the presumption is certainly in favor of their being easily digested, and more gradually and equably absorbed than ordinary dietetic sugars. The mineral portion of malt, so far as soluble in water, chiefly potassium phosphate and chloride, is of undoubted service to the system, and an element of value in malt extracts.

Albuminoid material constitutes an average of nearly ten per cent. of malted barley. In the best syrupy extracts of malt of the market, Dunstan and Dimmock found as much as five per cent. (4.0 to 6.1 per cent., five specimens) of albuminoids. Taking these figures, it appears that thirty-two to forty per cent. of the albuminoids in malt dissolve in water to such a permanently soluble form as to be obtained in the extract. At all events, it is a part of the alteration which gluten and other nitrogenous matters of grain undergo in malting, that they become in greater part soluble in water. Now we have in common life two hints toward the effect of malting upon the food value of albuminoids. The sprouted grain of a bad harvest is in effect imperfectly malted, its gluten suffers in vesiculating power, and it suffers in value. Again the panary fermentation of bread making begins with a saccharous change of the starch, nearly the same as that of germination, and bread is vesiculated by this means without general objection. Really we have no reason to doubt that soluble albuminoids of malt possess a good degree of dietetic value, though full assurance in the matter can only come from sufficient physiological tests.

So far we have only considered the constituents of malt extract as materials for digestion. As such they merit favorable esteem. Malt syrup, well made, has decided dietetic advantages over cane sugar syrups, as well as over a pure syrup of starch sugar (when it shall be obtained). Malt syrup furnishes a superior variety of sugar, with the wholesome addition of dextrine, and with smaller but still important portions of albuminoid material, and of potassium phosphate—all in a product little liable to contamination. To be sure this can never be a cheap syrup, but if its manufacture were undertaken with the object of making a food for general use, adopting efficient methods to dissolve quickly and concentrate rapidly the soluble food parts of malt, without regard to the preservation of diastase, the article could be furnished at rates within the means of the body of the people.

But malt extract is more prominently before the medical world as containing an agent itself capable of digesting starch. In the condition of health, the ingestion of a digestive agent can hardly be desired. It is doubless better for the glands to be under demand to furnish the due quota of the digestive agents—as it is better that we shall take food requiring digestion, and use more starch than sugar. The substance usually termed diastase has

*By R. S. McCulloch, Ph. C.

not been separated in the pure state. In a crude form it is obtained by fractional precipitation with alcohol. Dubrunfaut found that it was decomposed and its potency diminished by the alcohol, and applied the name maltin to the unchanged ferment, from which diastase was formed by alcohol. But the essential facts seem to be these, that at the very inception of the germinating process of seeds in general, portions of albuminoid substance undergo changes whereby they act as ferments and cause the saccharization of the starch in contact with them. Now to what extent can we and do we obtain an active agent of starch digestion in extracts of malt?

Analysis for quantity of diastase by its precipitation is worse than useless, it is fallacious. Like other ferments, diastase can be estimated only by its effects. As detailed by Messrs. Dunstan and Dimmock,* the solution supposed to contain diastase is added in given quantity, to weighed portions of starch, previously gelatinized, digestion is carried on for about three hours, at animal temperature, and each portion then tested for unconverted starch, by adding iodine solution. Working by this method, Mr. McCulloch found the following values of diastase, in the four extracts of malt before mentioned:

Of number 1, 0 8 were required to convert 1.0 gram of starch.

Number 2, 3.0 were required to convert 1.0 gram of starch.

Number 3 had no starch converting power.

Of number 4, 23.0 grams were taken to change 1.0 gram of starch.

Dunstan and Dimmock found only three out of fourteen samples of extract of malt to have any effect on starch, and of these three, there were required 17.29 and 34 grams, respectively, to change one gram of starch.

It is currently stated that in a temperature above about 68° centigrade (155° Fahrenheit), diastase in solution is rendered inert To ascertain more definitely what various conditions cause this result, a series of experiments were instituted† in the laboratory in which the writer is engaged. Aqueous solutions of malt were made and concentrated under numerous conditions, and the products were estimated for starch converting power. The results affirmed that barley malt loses its power of saccharizing starch as follows: (1) By continued heat in solution, above 65° centigrade (149° Fahrenheit), and by continued heat of the dry malt if much above this temperature. (2) By alcoholic fermentation even if very slight in extent. (3) By action of free mineral acids.

Extract of malt is officinal in the German pharmacopœia, and will be under the next revision of the pharmacopœia of the United States. The process of the former authority is defective in that it provides boiling to clarify. Whatever albuminous matter will not separate at 65° centigrade (149 Fahrenheit), may be retained without injury. Hager, in his "Pharmaceutisch Praxis," directs to macerate one thousand grams ground malt with an equal weight of cold water, at 10° to 15° centigrade (50° to 59° Fahrenheit), for six or eight hours. Then add four liters (four thousand grams) of water of 30° centigrade (86° Fahrenheit) and digest at 60° to 70° centigrade (140° to 158° Fahrenheit) for one hour. Filter, add the whites of two eggs, boil, strain, and concentrate quickly, in a vacuum apparatus, or by stirring on a water bath In this process the boiling is very objectionable. It is better that the maceration should be mostly at a temperature either above or below that of fermentation. The temperature of about 54° centigrade (129° Fahrenheit) is favorable for the latter maceration, and for the concentration. Clarification, if desired with use of egg white, can be done at 65° centigrade (149° Fahrenheit). In evaporation, a vacuum apparatus should be employed (at 54° centigrade), but it can be done in an open dish by means of constant stirring. There is little action of the diastase upon the unchanged starch, in maceration, as raw starch is not saccharized by diastase. Among other special preparations of malt, there is an extract made dry by addition of sugar of milk. The malts of various grains may be employed when the object is to obtain a food. For the fullest proportion of diastase, as a digestive agent, the malt of barley is preferable.

As a test of value and purity, take one part dry starch, gelatinize it, cool and add fifty to one hundred parts of the extract, and digest at a little above animal temperature for two or three hours, when the addition of a drop or two of compound solution of iodine should give no blue color. If the test can be extended to furnish a full estimation of digestive power, so much the better, but it is well to find the mere presence of diastase, as an evidence that fermentation has been avoided, and the food constituents are uninjured.

Extracts of malt should respond to tests for the dextrine and soluble albuminoids of malt. These responses will be faint in proportion to adulteration with glucose or other syrups. Alcohol should cause a decided turbidity, resolving into a flocculent precipitate. If ten cubic centimetres (two and one-half fluid drachms) be treated, in a test-tube, five-eighths inch wide, with an equal volume of a cold-saturated aqueous solution of picric acid, a decided turbidity should appear, becoming in ten minutes quite opaque. Diluted malt extract should give precipitates with most of the general reagents for alkaloids, including tannic acid.—Albert B. Prescott, M. D., in *The Physician and Surgeon*, Dec., 1881.

*Pharmaceutical Journal. Transactions, London, 1879, [III] IX, 733.

†By C. W. Parsons, Ph. C.

Night Sweats in Phthisis.—In the Glasgow Medical Journal for March Dr. John M. Young says: The drug agaricus, whose influence in checking night sweating was lately brought into notice in this country by Dr. Wolfenden, of Charing Cross Hospital, has been used pretty extensively during the past few weeks in Dr. Gairdner's wards in the Western Infirmary, with extremely satisfactory results. The drug, derived from the common toadstool, is a light brown, bulky, insoluble powder, with a very nauseous taste, and on this account cannot very well be administered as such. A tincture of the strength of ten grains to the drachm was found quite satisfactory, a proportionately smaller quantity of the drug in this form being required to produce equal effects. Finally, a principle, which may perhaps be called agaricine, crystallizing in long needles, like those of strychnine and other alkaloids, was extracted and administered in pill form, each pill containing one-half of a grain, and one or two forming a dose, according to circumstances. This is perhaps the most acceptable form in which to administer the drug, and the therapeutic effects obtained have been practically the same. These therapeutic effects are classed as follows:

1. Night sweating becomes proportionately lessened, according to the amount of the drug administered; and, if sufficient doses be given, becomes effectually checked or prevented, according to the time of administration.

This was observed to be the absolute rule in all moderate cases of phthisical night sweating where it was tried, and in one case, where the sweating was colliquative, agaricus brought the sweating within moderate limits; though probably, if sufficient doses had been given, it might have cut it completely short. In other cases of sweating not dependent on phthisis the drug was found to work well; indeed, its most notable effect was observed in the case of a patient who had had sweating of

the right side of his body and right leg persistently, at night, for eight months, and in which a dose of ten grains stopped the symptom for a night, almost at once.

Indeed, in the quickness of its action, agaricus resembles atropin. Like atropin, too, the effect is not permanent. In some cases, during the second night, sweating was found to be reduced below its average amount, or even entirely absent; but in the majority of cases, unless the drug was repeated, sweating returned as intensely as ever, and repetition of the drug during a considerable period does not appear to lead to any permanent result. Observation rather points to the necessity of gradually increasing the dose under such circumstances.

2. The effect of the drug against sweating is not more marked than its effect in promoting sound sleep, and relieving troublesome cough, especially of phthisis. This is the most notable fact to the patients themselves, a gradually increasing feeling of drowsiness following its administration in most cases, and this I can confirm from personal experience. In one case in particular, characterized by extremely troublesome and painful coughing during the night, to combat which numerous remedies had been tried with little or no effect, after the first large dose of tincture of agaricus this symptom became entirely subdued, and the patient had sound sleep. Her cough has since been effectually kept under by the remedy. In another case of severe spasmodic cough, of nervous origin, agaricus gave considerable relief when first administered.

The antihydrotic and soporific effects of the drug are probably distinct from one another, and not to be related as cause to effect, since, in some of the cases observed, sweating was always complained of as occurring during sleep, the body being covered with perspiration on awaking. Cessation of cough may, however, be the result of the soundness of sleep.

3. Strict investigation seemed to show that the drug has considerable influence in reducing the temperature, in cases of phthisis at least, where the fever is unstable, as much as two degrees of a fall having been observed within half an hour after administration of 1-12 of a grain of agaricine. Such a marked result was not always obtained by repetition of the experiment in different cases; but the fall observed in this way averaged 1.4°, and had its expression in a relieved feeling on the part of the patient.

Along with the effect on temperature, it may be noted that the rate of the pulse becomes usually reduced to a corresponding degree, but this effect has not been invariably noticed.

Reasoning from the analogy of the effect of nitrite of amyl on the blood pressure, I compared, in five or six cases, sphygmographic tracings immediately before and half an hour to an hour after the administration of the drug. I was not surprised, however, knowing the difficulty of registering fine differences in pressure by means of a sphygmograph, to find in most cases no discernible difference. In one case, nevertheless (probably one of more than usual susceptibility to the remedy), several trials showed that the tracings of the pulse, which, when uninfluenced, had a decided leaning toward the characters of dicrotism, after the administration of twenty grains, came to assume characters pointing to greater tension, the aortic notch diminishing or entirely disappearing. The rate of the pulse at the same time fell from six to twenty beats. These observations may have some bearing on the rationale of the effects of the drug, but they are far from free from the chance of fallacy.

Since the administration of the tincture was begun, complaints of sickness were only heard in one case, in which the drug had been given over a considerable period. Diarrhœa was only occasioned once, and that in a case where this symptom recurred at intervals, independently of the drug. Its laxative action, indeed, was noticed by some patients as very satisfactory. Dr. Wolfenden found that such diarrhœa could be averted by combination with one or two grains of Dover's powder. No other bad effects have been observed.

Good results have also followed its use in some of the other wards in the Western Infirmary. A sufficiency of the principle of the drug has not yet been obtained to make up a solution for hypodermic injection. Probably the effects following on this method of administration will be even more decided.

No comparative trial of its merits as against other medicines with similar effects was made the object sought for having been rather to confirm it as a drug at once innocuous and thoroughly to be depended upon against night sweating when administered by the mouth.

Dr. Wolfenden's remarks on this point may be quoted in conclusion: "Having made extensive trial of those remedies commonly in vogue for checking the debilitating night sweats of phthisis, I have found many sadly wanting, and only one —viz., atropin—that yielded really excellent results. Given in 1-70 of a grain doses it rarely fails. But atropin is a drug of great power, and capable of producing great physiological effects; and, although accidents are very rare, such an accident as an overdose might easily occur, and dispensing is not always faultless. . . . . The complete success of agaricus has led me to consider it of value equal to atropin, and superior to atropin, from the fact that it is quite innocuous. . . . . I believe it to be a preparation worthy of extensive trial, and of such equal efficacy with atropin that it may supplant it."—*Medical and Surgical Reporter.*

Psychical Impotence.—An unmarried gentleman, of twenty-eight or thirty years, recently sought our advice for what he considered hopeless impotency. He desired to marry, and had put off the ceremony from time to time, hoping to receive benefit from a number of physicians, under whose care he had placed himself at various times. At the time he consulted me, he expressed himself as having given up all hopes of getting right again, and was upon the verge of asking to be relieved from his obligations of marriage, feeling it to be his duty to his betrothed not to keep her waiting for him when he could not conscientiously marry. A careful examination, and a very unreserved talk with my patient, enabled me to make a very favorable prognosis in his case. The history of the case may be briefly summed up as follows: This gentleman had been what is known as a fast man, and had suddenly, two years ago, renounced his habits, and endeavored to reform his life preparatory to taking a wife. His continent life, thus entered upon, was followed by nocturnal seminal emissions, which were very troublesome, and which became more and more frequent, amounting to from one to three a night, and with very few nights in which no emission occurred. Besides this depressing circumstance, his mind was in constant sympathy with his condition, and added to his general depression. The result was that he finally became very nervous and despondent, and attributed his seminal losses to his former moral delinquencies, and failing to receive the proper benefit from treatment, he arrived at the conclusion that his case was beyond medical skill. From this long continued drain upon the system, and from the absence of natural sexual gratification, the sexual organs became debilitated and hyperæsthetic, and, consequently, when he attempted to follow the advice of a former medical adviser "to

go to see the women again," he failed to perform the sexual act, and after several unsuccessful attempts subsequently, he fully convinced himself that he was for ever ruined, and had lost irrevocably his virile powers. His timidity and general nervousness would cause a seminal discharge before the act was scarcely commenced, and in many instances before thorough erection had occurred. A more miserable patient never consulted me; a more hopeful case could not have been wished for.

Treatment.—I told him of the importance of strict obedience to my directions to the letter; told him I would want from six weeks to two months to effect a cure. To all of which he readily agreed. I at once prohibited him from associating with any immoral women; from reading any lascivious stories, etc. Gave him:

℞ Potass. bromid, gr. xxx
Fl. ext. gelsemii, gtts, x
Syr. aurantii 3 j
Aq. destil., 3 vij.

M. S. At noon and at bed time.

This was continued for three weeks, and thoroughly controlled and took possession of the sexual feelings. He had only one or two seminal emissions during that time. I then put him upon:

℞ Fl. ext. damianæ, 3 ss
Tr. nucis. vom., gtts. v.

M. S. Three times a day.

And:

℞ Ferri. dialysat, 3 ss.

S. Three times a day in sherry wine, ℥ j.

Before he had been taking the above fifteen days, he reported that he was not having any nightly emissions, and that he was not at all excited and nervous when in the presence of women; that his erections came on spontaneously in the mornings, and at night as well as at various times during the day; that the organ remained erect for a long time, and he had no seminal discharge. His general health was excellent, and his spirits were good.

We discontinued medical treatment at this point, and advised our patient, in the event of his wishing to test his virile powers before admitting his cure, to seek the most abandoned and depraved prostitute to be found, and tell her of his fears, and of his wish to ascertain his condition. We suggested this lower order of creatures in order that should he fail, he might attribute such failure not so much to his own physical and mental disorder as to his repugnance to such a low and disgusting creature. He soon reported that he was "all right in every way; better than he ever had been," "and now I am going to take my wife and be one of the happiest of men. 'Richard is himself again.'"

These are every-day cases, and yet they are not always successfully managed, much to the discomfort and sorrow of the patient, as well as to the discredit of the general practitioner; and this is written for the purpose of offering a few hints to those of my professional brethren who have paid but little attention to these troubles, which, while not fatal in character, are often fatal to the future happiness and welfare of many of our youthful patients.—C. A. Bryce, M. D., in *Southern Clinic*, Feb., 1882.

THE TREATMENT OF SYPHILIS WITHOUT MERCURY.—A new abortive remedy.—Dr. J. Edmund Guntz, of Dresden, in a work just published by him, makes some novel announcements regarding the treatment of syphilis. If true, they are of the highest importance, for he claims to be able "not only to do away with mercury in syphilis, but, in a large proportion of cases, to abort the disease." It is now over twelve years since Dr. Guntz wrote on this subject. He is therefore not a novice in the matter. In 1869 he advocated the use of bichromate of potassium as being a useful drug in treating syphilis. He could not prove any very great advantage for it, however, at the time. It acted slowly, and was apt to disturb the stomach, but being convinced that there was something in the drug, he set to work to find some way of getting more into the system without producing functional disturbance. For a time he combined the bichromate with the nitrate of potassium, and gave pills containing 1-16 gr. of each three times a day. With these pills he produced "remarkably favorable results." Yet the action was slow, and when a prompt amelioration of symptoms was needed, as in malignant cases, the remedy would hardly meet the expectations. From the favorable results obtained by giving the various minerals in solution with carbonic acid water, our author was led to attempt administering chromium in the same way, and with, as he now claims, very great success. He found that much larger doses could be taken in this form, and that a profounder impression on the system could thus be made. As a maximum dose he was able to give 3½ grains (.3 grammes) daily of bichromate of potassium in about 600 grammes of carbonic acid water, this being divided into five doses. Larger amounts provoked vomiting. This "chromwater," as he calls it, could also be given daily for weeks and months in all forms of syphilis without detriment to the health.

Having described this method of giving the drug, Dr. Guntz discusses its action upon the initial stage of syphilis and upon the disease itself after its full development in the system. In estimating the possible value of any drug as an abortive of syphilis, the numerous sources of error are referred to. The existence of and difference between true chancre and chancroid are admitted. The following are his statistics: Within one and a quarter years the author treated 194 cases of chancre. For comparative study he selects only 85 of these, since in the others there were sources of error. In 14 of these 85 cases the sores were cauterized. The remainder were treated with nothing but the chromwater; and in 47 of them constitutional syphilis failed to appear. In order to avoid every possible chance of mistake the author excludes 10 of these 47. Even then there were left 37 patients, or over one-half, who, when given chromwater alone, developed no after-symptoms. It is not stated, however, how long they were watched, except that 18 were under observation for 159 days. Still more favorable results took place with the 14 cases in which the initial lesion was cauterized. Of these only two developed symptoms of constitutional syphilis. Of the 85 patients therefore presenting, as Dr. Guntz asserts, initial lesions of syphilis, 49, under the "chromwater" treatment, remained entirely free from the disease. This is certainly a very extraordinary showing, and will be received with a great deal of incredulity. If this new agent is given after constitutional symptoms make their appearance, its action is to ameliorate the disease and hasten its course. It is efficient even in cases where mercury fails, and it acts more pleasantly and promptly. In fact, the disease is "in the shortest time definitely cured." The author has, for several years, used the chrome salt exclusively in the treatment of syphilis, and has given it in more than a thousand cases. He thinks that the day of mercury is over. He has recorded the histories of a large number of his cases.

Dr. Guntz has also used his chromwater with the best results in diphtheria. He suggests that the drug acts by reason of its powerful oxidizing properties. Without committing himself to any germ theory, it is thought that there is certainly a specific poison which develops in the various contagious diseases. And in chromium we have an agent that is inimical to the syphilitic poison, while it does not harm the system itself, but rather benefits it. The importance of Dr. Guntz's claims,

and the caution with which they should be received, are alike apparent and need no comment. —*N. Y. Medical Record.*

THE TOMATO AS A DIETARY.—The profession and the public are by no means agreed as to the dietetic value of the tomato. The classical authorities on food, such as Pavy and Chambers, dismiss the claims of this vegetable very curtly, simply placing it among the anti-scorbutics, and allowing it little, if any, nutritive power. The public, on the other hand, believe this ally of the potato to be not only a highly nutrient vegetable, but a stomachic, a cathartic, and generally a potent blood-purifier. That the tomato is thought too little of by the profession generally is true, but it may be doubted whether it possesses those wonderful alterative powers ascribed to it by the Americans, many of whom persuade themselves that they are never in health except in the tomato season. This fruit (as it may also be called), however, exhibits one remarkable property in connection with plant diseases, which suggests its use as a germicide and a protector against those disorders, so many of which we now know derive their origin from bacteria and allied germs. If a tomato shrub be uprooted at the end of the season, and allowed to wither on the bough of a fruit tree, or if it be burnt beneath, it will act not only as a curative, but protective, against blight and similar attacks. This hostility to low organisms is due to the presence of sulphur, which is rendered up in an active condition in the decay or burning. Remembering that digestion also splits up the tomato into its chemical constituents and releases sulphur, probably in a nascent condition and probably in the intestinal canal, it may have as great potency there as experiments prove it to have outside the body. Summer diarrhœa, English cholera and typhoid fever are all due to low organisms. As the diarrhœal and typhoid seasons are luckily contemporaneous with the fruiting of the tomato, it is not unreasonable to assume that tomato-eaters would be more than ordinarily likely to escape such diseases. It is worth noting that typhoid fever is most prevalent among the poor, to whom this expensive vegetable is almost unknown. Sailors, too, just after landing, are particularly liable to typhoid, and in them we may always assume a more or less scorbutic condition. But the question of the protection against disease by certain diets, and by such habits as the use of alcohol, tobacco and opium, has as yet been hardly inquired into.

Experiments are now being made on the tincture of the tomato which will help in determining its therapeutic value. Meanwhile, eaten cooked with hot meats, and in the form of salad after a cold lunch, it is a pleasant and useful addition to our ordinary regimen. The fruit-acids it contains, combined with the mechanical effect of the seeds and skins, render it to some extent an enemy to scurvy as well as a laxative, and the sulphur, with its known power over septic conditions, would probably contribute to make its use a protection against the poison germs of those diseases, like typhoid, that find their way into the system primarily by the alimentary canal. One caution is needed to the lovers of this esculent. The taste for it being an acquired one, it is the more likely to be indulged in to excess, and we have known almost as many tomato-maniacs as ostro-maniacs. All kinds of raw fruit, it should be remembered, except used with care, are liable to irritate, and we have known an instance where a person, working hard all day on raw tomatoes only, was seized with inflammation of the bowels, which proved fatal in a few hours. As an article of diet, then, two or three tomatoes will be found as effective as, and certainly safer, than a dozen.—*Australian Medical Journal.*

THE TREATMENT OF SEA SICKNESS.—Dr. Milan Soulé, surgeon on the steamship City of Sydney, has written an account of his experience with the bromide treatment for sea sickness, as laid down by Dr. G. M. Beard. His testimony to its efficacy is very emphatic and convincing. He says:

"About three years ago I began to use the bromides in treating sea-sickness, following, as nearly as possible, the directions given in Dr. Beard's valuable monograph on that subject. I had then been in the service of the Pacific Mail Steamship Company nearly four years, and as my field for experiment was large, I had tried nearly every drug or combination of drugs that had ever been proposed for the cure or alleviation of this disagreeable malady. Repeated failures and humiliating disappointments had so shaken my faith in the power of drugs over this disease, that I began to use the bromides with a good deal of doubt and hesitation. Greatly to my surprise and gratification, however, I found that I was able to entirely prevent or greatly to alleviate the disease, and have not one single failure to record. The following is the combination I most frequently employed, viz.:

℞ Sodii bromidi, ʒ jv
Ammonii bromidi, ʒ ij
Aquæ menthæ piperitæ, ʒ iij.

M. S.—A teaspoonful before meals and at bedtime; begin treatment three days before going on board.

"When preparatory treatment had been neglected and the disease fully established, I put a teaspoonful of the above in a half-tumbler of water, add a drop of fluid extract ipecac., and give a teaspoonful every five minutes; it generally relieves the patient in less than an hour. I have received several letters (guinea enclosed) from passengers asking me to send them the above formula. Next to the bromides, I have found hyoscyamia the most successful remedy. Atropia will frequently afford relief, but is not altogether safe, as I have noticed a few cases of retention of urine to follow its use. I gave nitrite of amyl a fair trial, but it proved a complete failure. I have notes of several cases where the bromides entirely prevented sea-sickness during voyages of from twenty to thirty days, although these patients were always sick on previous voyages."—*New York Medical Record.*

REMOVING THE NOSTRUM TAX—MISCHIEVOUS LEGISLATION.—We read that the committee of Congress have in contemplation the report in favor of taking off the tax from proprietary medicines. A movement so hostile to all the interests of the American people except the individuals, comparatively few, who are engaged in the propagation of the curse of quack medicines, suggests some peculiar influence acting on the members of the committee—some influence other than a desire to promote the welfare of their constituents and of the people. When we look on the one hand at the cheapness of the ingredients which, for the most part, enter into the composition of nostrums, rendering many of them absolute frauds, and on the other hand at the enormous fortunes often accumulated by the fabricators despite the present tax; and again, when we consider the false pretenses and lying and forged certificates which are spread over the country as baits to catch the immense army of ignorant, dyspeptic, hysterical, nervous, weak-brained and hypochondriacal people, to drain their pockets by indiscriminate hit-or-miss medication—mostly the latter—we are forced to the conclusion that there is nothing under heaven so deserving of the first place in the tax list as proprietary medicines.—*Pacific Medical and Surgical Journal*, June, 1882.

New Remedies.

EXAMINATION OF THE ROOT OF BERBERIS AQUIFOLIUM—VARIETY REPENS—OREGON GRAPE ROOT.*—This plant is found in the mountainous regions of Oregon, California, Utah, Colorado, Nevada, and Montana, from which latter section the sample here examined was received.

The roots, as received, were in broken pieces, about a foot in length and one-fourth inch in diameter; they had a brownish exterior layer, underneath which was a bright yellow layer. The powdered sample has a bright lemon yellow color and a decidedly bitter taste.

The root is said to be much used in form of decoction for the treatment of what is known as the "mountain fever" among the western miners. By them it is reported to be an efficient tonic and anti-periodic, capable of replacing salts of quinia in the treatment of malarial disorders.

In 1837, a French physician, Piorry,† stated that he preferred a properly-made extract of the root of berberis vulgaris (a closely related plant) to quinia salts in all diseases where "he found the spleen enlarged in a patient suffering from ague, intermittent, or hectic." Some years later, his former pupil, Dr. L. M. Klein, made further experiments in treatment of fevers in Algeria, and he strongly confirmed the statements of Piorry. As the root of berberis vulgaris (the common "barberry" of the Eastern States) is very similar in composition to the root of berberis aquifolium, variety repens, the therapeutic action of the two is likely to be about the same, and the statements based on trials of the one are probably applicable to the other. Be this as it may, the fact remains that recent trials in this country seem to show that the tonic properties of Berberis Aquifolium are unquestionable, and eclectic practitioners have long claimed that its antiperiodic virtues were equally well defined and established.

A careful chemical analysis of the powdered roots reveals the presence of two alkaloids, to which, in all probability, can be ascribed the medicinal effects of the roots. None of the other substances were of a character likely to have any decided activity.

The first alkaloid, berberina, is the substance to which the yellow color of the root is due; it is freely soluble in alcohol, moderately soluble in water and in chloroform and ether. Its taste is decidedly bitter. It forms sparingly soluble lemon or orange-yellow salts, with sulphuric, hydrochloric, and nitric acids, and salts more freely soluble with acetic, phosphoric, and hypophosphorous acids.

This alkaloid is removed from the plant by water; much more readily, if a little acetic acid is added.

The alkaloid and its salts have been used as a tonic, and as an antiperiodic, and glycerine solutions of the alkaloid are still considerably employed in treatment of ulcerated surfaces.

The second alkaloid is called "oxyacanthina; it is a white, bitter, difficultly crystallizable solid, which changes to a light-yellow color if it is long exposed to the air in a moist condition. The presence of a little caustic or carbonated alkali seems to intensify this color, and may possibly cause the change. If this acid be treated with dilute nitric acid in excess, and slightly warmed, it gives off nitrous vapors, and is converted partly into a yellowish-red resin-like substance, and a soluble substance much resembling berberina in color, and precipitated by Mayer's solution. It may be possible that this alkaloid is closely related to berberina; a similar action occurs with hydrastina.

There seems to be no statements regarding the medicinal properties of oxyacanthina. As it is easily prepared, the matter might readily be investigated. It may be separated from the mother liquors, after berberina has been crystallized from extracts of berberis aquifolium or B. vulgaris, by adding a very slight excess of sodium carbonate solution with constant stirring. The yellowish precipitate should be allowed to separate; it can then be washed on the filter until nearly free from berberina, dissolved in dilute hydrochloric acid, and again precipitate by careful addition of ammonia. After washing and drying, the substance is moderately pure. It may be further purified by crystallization from alcohol. It cannot be crystallized from chloroform alone.

The other chemical properties of these two alkaloids will be given later in this article.

The yellow alkaloid berberina is geographically very widely distributed, plants containing it having been found growing in Europe, Asia, Africa, and America. It is also found, probably, in more natural orders, and in also more distinct plants, than any other alkaloid—possibly caffeina may prove an exception.

Of the natural orders, it has been found in ranunculaceæ, anonaceæ, menispermaceæ, berberidaceæ, rutaceæ, and leguminoseæ. The first five of the above natural orders, are closely related, and it may prove that the presence of berberina together with certain other alkaloids, may be of service in the identification and classification of doubtful botanical specimens. Thus it is at present possible to distinguish chemically between the root of hydrastis canadensis (nat. ord. ranunculaceæ) and the root of berberis aquifolium or B. vulgaris (nat. ord. berberidaceæ); for while both plants contain berberina, still this yellow alkaloid is associated in hydrastis with a white alkaloid (hydrastina), which gives quite different chemical reactions from the white alkaloid of berberis (oxyacanthina). A more complete study of this question would be of scientific and practical interest.

The following is a proximate analysis of the roots:

Proximate analysis of the roots of berberis aquifolium, variety repens. "Oregon grape root."

Moisture		6.08
Ash, soluble in water	1.63	
Ash, insoluble in water	2.08	
		3.71
Crude fibre		23.33
Albuminoids, insoluble in water and alcohol	3.15	
Albuminoids, soluble in alcohol, insoluble in water	1.68	
		4.83
Berberina*		2.35
Oxyacanthina*		2.82
Black substance with oxyacanthina		0.23
Resin, insoluble in ether, soluble in alcohol		1.91
Sugars (traces), organic acids (?), extractives, colors		4.55
Ether extract, chiefly wax		1.36
Gum and yellowish color		5.56
Starch isomers, by titration		18.05
Substances extracted by acid and alkali		25.22
Determined by difference		
		100.00

In the following table are given some of the properties and characteristic reactions of these three alkaloids. It will be seen that the different solubilities of the platinum salts (18) and of the tannate (20), and the strikingly different color reactions, especially with sulphuric and molybdic acids (22), serve to make the distinction between hydrastina and oxyacanthina comparatively easy and certain. Lack of material and of time prevented further chemical investigation of oxyacanthina.

*From Report of the U. S. Commissioner of Agriculture for 1880, p. 139.

†The Lancet, 1872, Dec. 5, p. 498.

*The figures of berberina and oxyacanthina are probably, a little too low, owing to the sparing solubility of the alkaloids or compounds which were weighed. The error does not probably exceed 3.1 per cent. in either case and is probably least for berberina, which was weighed as platinum salt. The oxyacanthina was weighed as base.

	Properties and Reactions.	Berberina.	Hydrastina.	Oxyacanthina.
		$C_{20}H_{17}O_4$	$C_{22}H_{23}NO6$ (?)	$C_{16}H_{33}NO6$ (?). $C_{32}H_{46}N_2O_{11}$ (?)
1	Color	Lemon or orange	Pure white	White; yellowish, on exposure.
2	Taste	Bitter	Nearly tasteless	Bitter.
3	Water	Moderately soluble	Insoluble	Nearly insoluble.
4	Absolute alcohol	" "	Soluble	Soluble.
5	Com'l 90% alcohol	Soluble	"	30 cold; 1 boiling.
6	Ether	Nearly insoluble	"	125 cold; 4 boiling.
7	Chloroform	Moderately soluble	"	Freely soluble.
8	Benzole	Nearly insoluble	"	Soluble.
9	Ammonia	Soluble	Insoluble	Sparingly soluble.
10	Soda	"	"	Moderately soluble.
11	Sodium carbonate	"	"	Nearly insoluble.
12	Tinct. iodine	Dark red precipitate	Dark-red precipitate	Dark drown-red precipitate.
13	Iodine in iodide	Nearly black precipitate	Nearly black precipitate	" "
14	Potas. merc. iodide	Yellow precipitate	Yellow precipitate	Yellowish precipitate.
15	Phosphomolybdic acid	Yellow precipitate; soluble in Ammonia	Brownish precipitate; not soluble in ammonia	Brownish prec., insoluble in, but turned dark-blue by NH_4OH.
16	Potas. cadmium iodide	Yellow precipitate	White precipitate	White precipitate.
17	Picric acid	Yellow precipitate; insoluble in dil. HCl	Yellow prec. insoluble in acetic acid.	Yellow precipitate insoluble in acetic acid.
18	Platinum chloride	Yellow precipitate; soluble in HCl	Yellowish precipitate; soluble in HCl.	Yellowish precipitate; insoluble in HCl.
19	Gold chloride	Yellow precip.; insol. in HCl.	Yellow precip., insoluble in HCl	Orange precip.; insoluble in HCl.
20	Tannic acid	Yellow precipitate; insoluble in HCl or $HC_2H_3O_2$.	Brownish precipitate; soluble in $HC_2H_3O_2$, but insol. in HCl.	Brownish precipitate; insoluble in $HC_2H_3O_2$ and dil. HCl.
21	Conc. sulphuric acid	Yellowish-red, olive-green, brown, olive-brown.	Yellow, purple-brown, green	Brownish-purple, browner, more purple on standing.
22	Sulphuric and molybdic acids	Yellow-brown, olive-green; same warmed.	Deep-green, brick-red, red-brown, dark chocolate brown.	Purple; fades slowly; becomes yellow, then green.
23	Conc. nitric acid	Orange-red; no effervescence	Orange-red; effervesces; brown and darker.	Orange-red; effervesces; color permanent.
24	Fused zinc chloride	Yellow; light-brown	Light yellowish brown	Chocolate-brown.
25	Specific rotatory power		+153 5 (in excess dilut. HCl).	

Coto Bark.—Having had occasion lately twice to dispense preparations of Coto bark, ordered by two different practitioners of New Orleans, and understanding from both gentlemen that the drug had proven a failure in their hands, I take the liberty to make known to your honorable body some facts in connection with this highly valuable drug.

Let me before I go further, state that the preparation used was a fluid extract, and came into my hands from a well-known Philadelphia establishment. Having had considerable experience with Coto bark during the past four years, and having myself prepared the alkaloid contained in the true bark, I declared my doubts when I filled the prescriptions, that the fluid extract on hand was made from the true bark. The taste and odor differed widely from the barks I had handled previously, and I wrote to New York to a highly responsible party, who I positively did know had some of the true Coto bark on hand. I send to your honorable body some of the fluid extract dispensed in the two mentioned cases, and some prepared by me carefully from the specimen received from New York, also some of the powdered drug, and which I positively declare to be the genuine article.

Coto bark was to my knowledge first used in Japan, by an acquaintance of mine, a Russian physician by the name of Dct. Goertz, with whom I conferred on the subject. It proved highly valuable in his hands in Asiatic cholera, cholera infantum, and chronic diarrhœa, and I have filled his prescriptions in New York, where he employed Coto with marked success in cholera infantum.

The drug was furthermore extensively tested in cholera infantum at the Demilt Dispensary, New York. Dr. Parsons records in the Medical Record 170 cases of cholera infantum out of 180 cured by Coto, which were treated by him at the Demilt dispensary during two months, and I can refer to at least a dozen physicians of New York city, who have used the true bark with decided success.

The drug was used with decided success by Dr. Burkart and by Dr. Rieker at the Ludwigs hospital, in Stuttgart, but as they objected to its pungent taste, they employed the alkaloid Cotoin, contained in the true Coto bark. Eleven cases of gastric catarrh were treated, one-tenth of a grain being given hourly. Some of the cases treated were of old standing; and some very severe attacks of cholera morbus, where previously employed opium, tannin or lead acetate had failed, were also treated. Cotoin produced speedy relief, generally in a few hours, and complete recovery in from twelve hours to six days. (Buch. u. Repertoir für Pharmacy, 1876, page 520.)

Dr. J. Burney Yeo, of London, has found it, with hardly an exception, a specific in uncontrollable diarrhœa, where opium, bismuth, tannin, ipecacuanha, had failed. It arrested the intestinal flux, and relieved the pain and irritation in a remarkably short time. He employed the fluid extract in five minim doses, mixed with mucilage acaciæ and syrup, and always found the drug act inferiorly when mixed with mixture creta or other substances, a fact which I frequently have heard other practitioners express also. I have known Coto bark to be prescribed in diarrhœa of a phthisis patient, together with pulv. creta compound put up in capsules, with little effect, while compressed Coto pills afterward acted like a charm.

The valuable therapeutics of Coto bark are also recorded by Dr. Frank, of Cannes, in the Practitioner, especially in regard to the diarrhœa of phthisis.

True Coto bark comes from the interior of the state of Bolivia into the market; it is gotten from quina cota, and reaches us packed in cerones of about 100 lbs. weight. It resembles in appearance very much red Peruvian bark; it is of the same color, is brittle, of pungent aromatic odor, and of a sharp, peppery taste.

The true bark contains an active principle which is not an alkaloid, and which has been called cotoin. It has been manufactured by Jobst in Germany; and in the United States I was the first who had occasion to prepare it on a larger scale. The spurious bark with which the market has been flooded by unscrupulous dealers does not contain cotoin, but paracotoin, and is almost inert.

Cotoin forms pale yellow prisms, insoluble in petroleum ether, but soluble in alcohol, chloroform, carbon bisulphide and to some degree in hot water, from which it is again precipitated while cooling. It is soluble in alkalies and precipitated again by

excess of hydrochloric acid as cotoin. Reaction with nitric acid is blood-red, and by adding water a reddish brown resinoid is formed. Chloride of iron produces a red brown color, and which changes later to a dark brown.

The paracotoin contained in the spurious bark resembles cotoin in appearance, but is of a paler yellow color, and does not crystalize as easy as cotoin; it does not give any reaction with chloride of iron, and is also of far less acrid taste than true cotoin. It has been employed hypodermically at the Vienna Clinics, but with what results I am not at present able to state.

Besides cotoin the true Coto bark contains Dicotoin, which resembles cotoin much, and which by heating with liquor potassa is converted into cotoin. The dose of cotoin is from one-fourth to one grain, and has been found of specific value in chronic intestinal catarrh.

Jobst also found in true Coto bark Piperonylic acid. The bark of Quina Coto is also strongly aromatic and astringent, and the fluid extract should, owing to its sharp, peppery taste and the contents of oleoresin, always be given either in capsules, or with mucilage and syrup as a velisculum. For chemical notes on cotoin, and for a full history of Coto bark, I refer to J. Jobst's valuable paper on this drug.

There is no doubt that Coto bark is one of the few newer remedies which, like Jaborandi, will prove a valuable addition to our modern materia medica, especially in our climate, and the medical profession will soon find in Coto bark and cotoin valuable therapeutical agents, and take them up, even after having been previously disgusted with the Paracoto bark and its paracotoin.—F. Lascar, Ph. D., in *N. O. Med. and Surg. Jour.*, April, 1882.

NITRO-GLYCERINE.—One of the most important additions recently made to practical therapeutics is nitro-glycerine. This agent contains enormous energy stored up in its constituents, and would therefore seem, *a priori*, to be possessed of intense physiological activity. Investigations have confirmed this supposition. The form in which it is made available for administration is the centesimal solution: one minim of nitro-glycerine dissolved in 100 minims of alcohol. As there are remarkable variations in the susceptibility of persons to the action of this agent, it is necessary to begin with a minimum dose, and increase gradually until some physiological disturbances occur. Some persons experience effects from a single minim of the centesimal solution. Beginning with a drop of this solution three times a day, a drop should be added every day until the desired effect be produced. When the person taking it is under the eye of the physician, a much more rapid increase of the dose may be allowed. Some persons are able to take a minim of pure nitro-glycerine, but such insusceptibility is comparatively rare.

The physiological effects of nitro-glycerine are eminently characteristic, but they accord with those of the nitrites in general—with amyl-nitrite, nitrite of soda, etc. When a sufficient dose is swallowed, in a few minutes the face flushes, the heart bounds, and continues in rapid, even tumultuous action; the superficial arteries pulsate strongly; the head aches, with a tense, band-like feeling about the forehead, and singing in the ears, vertigo, dimness of vision, confusion of mind, and even suspension of the cerebral functions or unconsciousness may result. According to Dr. Murrell, who has himself experienced the action to this extent, unconsciousness may be produced without detriment, and be quickly recovered from. The effects are clearly referable to paresis of the vaso-motor system, and of the pneumogastric, whence increased action of the heart and dilatation of the arterioles follow. The hydrostatic effect of this change in the vascular tension, and in the distributioon of the blood, must be obvious to all. Without further comment on the physiological actions, we now lay before our readers the results of clinical experience.

The applications of nitro-glycerine to the treatment of disease are directly deducible from the physiological study—another proof, if more were needed, of the value of the physiological method. A remedy which so depresses the vascular tension must be useful in conditions of disease in which the vascular tension is abnormally exalted. A capital illustration of this state is afforded in the hypertrophy of the heart and of the muscular layers of the arterioles, with a resulting high arterial tension, belonging to chronic Bright's disease. It has even been maintained that this condition of the circulatory system is the first step in the pathological changes. And, as has recently been shown by DaCosta and Longstreth, very important structural alterations occur in the solar ganglion and semilunar plexus. Whether these pathological conditions precede, or succeed, to the renal changes is yet a disputed question, but it is evident that the sympathetic system is concerned in them in some way. This fact has induced the use of nitro-glycerine in the chronic form of albuminuria, and it appears to have been distinctly beneficial. It is given in sufficient quantity to antagonize the high tension of the arterial system, and the state of lessened tension must be maintained long enough to have an effect on the kidney textures. If further experience shall confirm the observations already made, we have a valuable addition to our resources.

In angina pectoris, a state of exalted arterial tension, in a considerable proportion of cases, is an important factor. Observing this, and remembering the effect of amyl-nitrite on arterial tension, Brunton concluded that this agent would afford relief in angina pectoris. His theory was amply confirmed on trial. Although nitro-glycerine cannot be utilized in the treatment of the paroxysm of angina pectoris, its methodical administration during the interval may prevent the attacks.

The application of nitro-glycerine to the treatment of certain cardiac diseases is a most important therapeutical expedient. When the walls of the heart are weakened by myocarditis, or by fatty degeneration, any cause suddenly increasing the vascular tension may arrest the movements of the organ. Great embarrassment of breathing, pulmonary congestion and œdema, and general dropsy may result from the weakness of the heart's walls, and these difficulties are enhanced by a condition of elevated tension of the arteries. In such cases nitro-glycerine is found to do much better than digitalis, which, on the other hand, is more efficient when the vascular tension is low.

One of the forms of migraine, or sick headache, is that characterized by contraction of the arterioles, and consequent pallor of the face and lips. This is speedily relieved by nitro-glycerine. Also, the cases of neuralgia associated with spasm of the arterioles are similarly benefited. There is, probably, a form of dysmenorrhœa in which the same condition of the vascular system exists, and in which the same kind of remedy is found to give relief. We might enumerate many maladies, differing in various ways, but agreeing in respect to the high state of the arterial tension, improved or cured by nitro-glycerine. There is, therefore, a wide field of usefulness for the new agent; and its applications to the treatment of disease, based on its physiological actions, are clearly defined, and have an exactness belonging only to mathematical science.—*Medical News*, April, 15, 1882.

THE KOLA OR GOUROU NUT.—These seeds, called also Ombémé nuts, are the produce of Sterculia acuminata, belonging to the natural order Ster-

culiaceæ, and are known to us by the accounts of West African travelers, who state that when chewed or sucked, they possess the power of rendering the flavor of water, even if half putrid, agreeable, and they were believed to contain caffein. They have recently been made the subject of analysis by MM. Ed. Heckel and Fr. Schlagdenhauffen, who have found that they do actually contain more caffein than the best samples of coffee that could be procured, and that this base is altogether free and uncombined—not therefore, as in the coffee berry, united with an organic base; secondly, that they contain a very appreciable quantity of theobromine, which assists the action of caffein, and possesses similar properties to that base; thirdly, which is an important fact, that they contain a considerable quantity of glucose, of which cacao presents no trace; fourthly, that the quantity of starch present is three times greater than that contained in theobroma, which explains its nutritive value; fifthly, that there is but little fat, in which respect it differs notably from cacao; and, lastly, that they contain a special form of tannin, which approximates caffeo-tannic acid in its composition, and a red coloring matter, very similar to that named by Payen cacao-red. The physiological examination of this substance has shown that its properties are essentially due to the caffein and theobromin it contains. The seeds, it appears, have long been in use in Soudan and Western Africa, for the relief or cure of diseases of the intestine or liver, and especially in cases of atony of the digestive tract, and also as a masticatory and tonic, like the areca-nuts, which are held in such high esteem by the natives of India. Medically they may come to occupy a prominent place by the side of coca and other anti-metabolic remedies, to which they would probably prove superior in consequence of the tannin they contain.—*The Lancet*, April 8, 1882.

Physiological Action of Kava.—Mr. Kesteven, colonial officer at Levuka, Fiji, contributes (Practitioner) the following on this interesting drug:

The general belief that kava has stupefactive, or intoxicating properties, is incorrect. Its primary effect is stimulating, like coffee, but it certainly has no intoxicating effect whatever; indeed I should say that its effects are the reverse, clearing the head and sharpening the mental faculties. It is re-invigorating, and I know of no draught more refreshing in fatigue from bodily exertion. It exerts a powerful action upon the salivary glands, speedily and allaying the thirst incident to hot climates.

A night's carouse, however, from kava, as frequently indulged in by the native, impairs the function of locomotion, and you have the curious spectacle of a man utterly drunk in his walk, while his intellect is unclouded—he is unable to control the movements of his legs, but is perfectly aware of his disability. When the effects have passed off, there remain no after consequences, for example, "hot coppers"; "sore heads" are unknown as a result of kava drinking. Deducing from these facts a direct action upon the spinal cord, I have used, with decidedly beneficial effect, a concentrated extract of this root, in several cases where I suspected congestion of that portion of the nervous centres.

The bodily temperature is not increased by the action of kava, it has only slight influence over the pulse, which, however, it somewhat steadies. Its action upon the intestines is constipating. I have thought that I have seen "liver complaints" induced by habitual kava drinking, but my experience under this head is incomplete. Old and inveterate kava drinkers have a belief that the eyesight is injuriously affected by a continued indulgence in its use, but I have not had sufficiently long observation for confirmation, and have, as yet, seen no evidence thereof.—*Physician and Surgeon*, May, 1882.

Hoang-Nan and Hydrophobia.—Paris Médicale reports that, at a sitting of the Société Médicale des Hôpitaux, January 27th, 1882, M. Gingeot read an account of a case of hydrophobia in man, treated with Hoang-nan, a medicinal substance used in the extreme Eastern countries as a remedy for a number of incurable diseases. Four pills were given, each containing grs. iss of the drug; but they were thrown up. M. Gingeot then had recourse to subcutaneous injections, dissolving the pills, and giving the value of two in each injection. The patient died, but he did not think this failure should condemn the process. In the first place, it should have been tried at an earlier stage of the disease, and then again, he believed that the right preparation to use as an injecting solution was the hydro-alcoholic, or an aceto-alcoholic extract of hoang-nan. M. Dujardin Beaumetz re-called the fact that during last year twenty-three deaths from rabies had been recorded in Paris. Different modes of treatment were used; but he gave his preference to the Russian method, which consists in the use of garlic, or sulphide of allyl, and thus far his patients had met with no accidents. He had made experiments with valdivin on mad dogs. This substance does not cure rabies, but it prevents the paroxysms. M. Sevestre observed that he had used pilocarpin, but without success.—*Med. and Surg. Reporter*, April 1, 1881.

Toxic Effects of Nitro-Glycerine.—Dr. Barrington Nevitt reports the following interesting case, in a communication to the Canadian Jour. of Med. Science:

A. B., a florid, healthy looking man of about forty, by occupation a contractor, having a great deal to do in constructing drains makes use of dynamite cartridges. He frequently carries one of the cartridges about with him in his bare hand for the purpose of warming it. The cartridges are made of paper, and the nitro-glycerine often leaks through, staining the paper. He has noticed on one or two occasions a stinging sensation when he had a cut or crack on his hand. After this, within a few minutes, he would be seized with an intense headache, flushing of the face, ringing in the ears, and a feeling as though the head were enormously enlarged and swollen, together with a palpitation of the heart. At other times the headache would not come on until night, after his return from work. It would then occur accompanied by the same symptoms as during the day, and was traced to his usual custom, after washing his hands as thoroughly as possible, of touching his tongue with the fingers, to see if all the dynamite was washed off. It was only when he tasted a peculiar sweetish taste that the headaches were found to supervene. After being advised of the probable cause of these symptoms he used gloves when handling the cartridges, and did not taste his fingers, and has since had no sensations of the above character.—*Druggists Circular and Chemical Gazette*, March, 1882.

Wholesale Manufacture of Fluid Extracts.—The manufacture of fluid extracts, the Oil, Paint and Drug Reporter truly says, on a large scale, is solely the outcome of American enterprise. In Europe each pharmacist manufactures his own extracts from the crude drug. The system is sanctified by immemorial usage, and although entailing much labor and oftentimes large additional expense, it is still adhered to, like most effete European institutions, for that reason. Here where more advanced ideas obtain, and American enterprise is continually seeking new outlets for its energy, the wholesale manufacture of these extracts has obtained a firm foot-hold, and to-day they are considered essentials in every pharmacy throughout the country.—*The Druggist.*